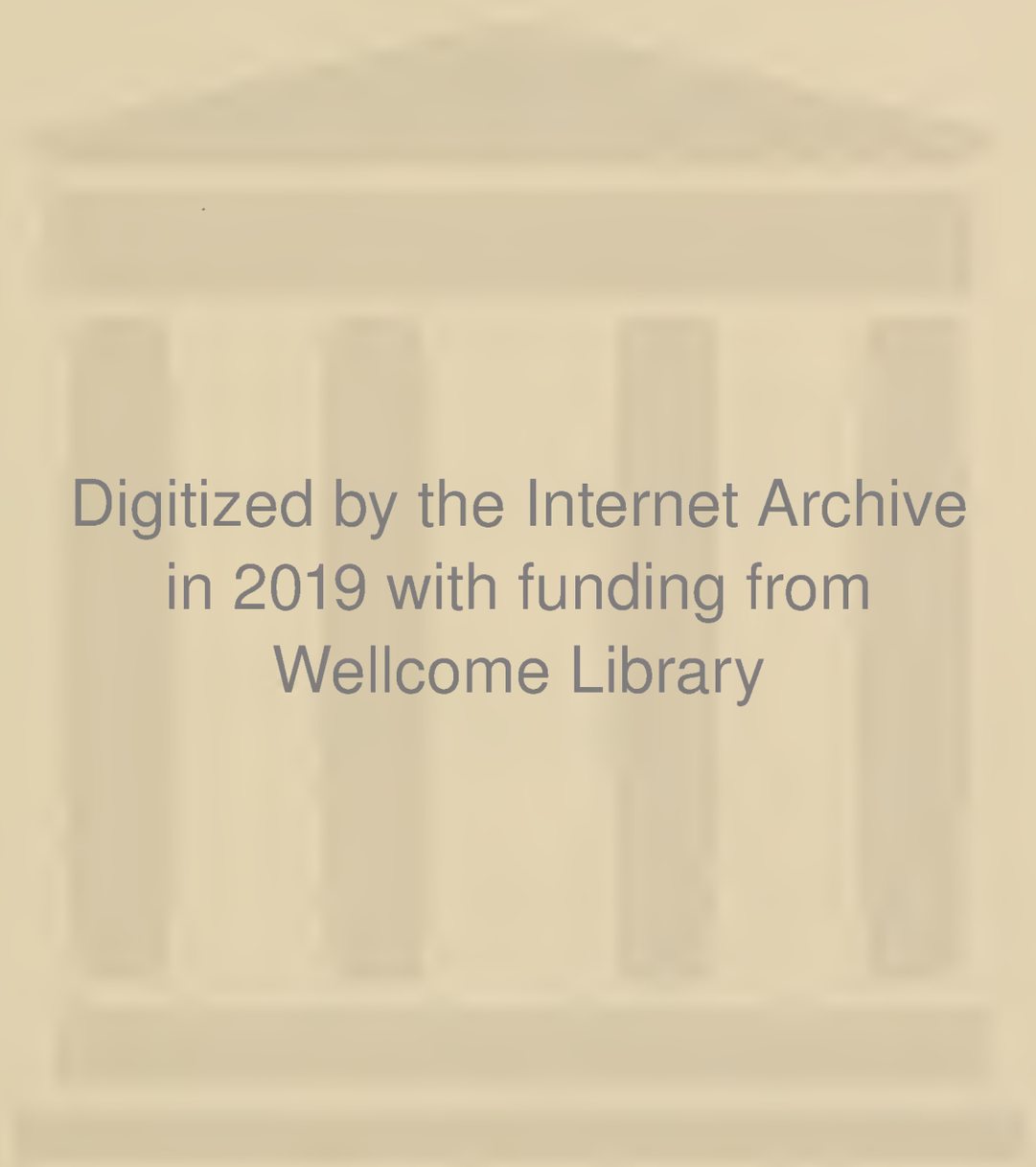
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OBSERVATIONS, &c. on DROPSY.

BY JOHN DARWALL, M. D.

Physician to the Birmingham Dispensary.

NUMEROUS as the works are upon dropsy, we are still in want of a theory which shall fully comprehend and explain all the phenomena; and the principal cause of this evidently lies in the exclusive manner in which pathologists have viewed the subject. It has been, and still is, perhaps, a very common theory, to attribute the dropsical effusion to diminished absorption. By other pathologists, it is considered the consequence of debility in the extreme vessels, and depending upon a general debility of the system; while by yet another sect, all the phenomena are referred to inflammation. So far as the knowledge hitherto accumulated, will enable us to form any opinion, the first explanation, or that of diminished absorption, seems inadmissible; it is at least certain that the absorbents generally do not participate in this inactivity.

The experiment of Lower, in which the ligature of the vena cava was followed by effusion, was formerly considered to demonstrate this opinion beyond the possibility of doubt. But to explain the experiment upon this principle, and to maintain that effusion takes place on all occasions in consequence of such an obstruction, would be to make facts agree with the experiment, and not the experiment with facts. For we have dropsy occurring frequently where there is no reason to suspect the existence of such an obstacle, and either therefore the experiment may be considered in a more comprehensive manner, or it is applicable only to one mode of the disease. But it may be explained much more comprehensively, for if we regard the arteries and veins continuous,

and the exhalent or secreting vessels connected with, and terminations of, arteries, any obstacle occurring in the veins, a greater flow will take place to the exhalents, and in proportion to the obstruction will be the consequent effusion. Now the knowledge we have of the absorbents, and of the function of absorption, whether effected by the veins or the lymphatics, is very much upon the whole against the doctrine of diminution in this function, while another doctrine, that of increased secretion or effusion, has some plain and manifest facts in its favour. Generally, perhaps always, the absorbent power is the last to give way in disease, and most frequently its activity is in exact proportion to the severity of the complaint. It seems absolutely necessary for the support of life, that the blood-vessels should have a certain complement, and as this is constantly undergoing waste, it requires constantly to be replenished. The usual source of this repletion lies in the chyle, and this again is furnished by the process of digestion; but in disease, this function is always impaired, and even when materials are offered, is unable to act upon them. When, therefore, such an occurrence happens, the absorbents are called upon to perform their functions more energetically than usual, in order to supply its place to the circulation. Accordingly in fevers, at first the emaciation is very slow, particularly in inflammatory fevers, and often little difference will be perceived for the first five or six days, little call being made within that period by the blood-vessels for an additional supply. But after this time the emaciation is exceedingly rapid. In the same way also, in long continued disorders, the wasting becomes more evident towards the termination of the disease. Of this office of the absorbents supplying the blood-vessels, natural history likewise affords illustration in the hypernating animals. However fat the dormouse at the commencement of its torpid state, it is lean and emaciated at the end. These observations tend to prove, that in general the absorbents do not participate in the inactivity of the rest of the system; but it might still be contended that this would form no argument against an occasional inability in these vessels, of performing their functions. The question then presents itself, whether dropsy is dependent upon such inability. Many circumstances seem opposed to this explanation of effusion.

One of the oldest observations made respecting dropsy by the earlier medical writers, was the extreme tensity of the arms, and indeed of all those parts, which are not swelled by water, "âquâ inter cutem," and the inference from this was very plain, viz. that wasting equally occurred in those limbs, which had not the same slender appearance, but that the emaciation was concealed by the anasarcous swelling; and if we wished farther proof of the correctness of this remark, it is afforded in those dropsical effusions of the lower extremities, for which it is thought advisable to puncture the skin, or to make incisions, but more particularly in the latter case, for then the subsidence of the intumescence is

more rapid and more remarkable. But we know no other means by which this wasting can be effected, excepting through the medium of the absorbents, and in this respect, therefore, we have ample proof that their activity is not diminished.

Again, it is one of the properties of the absorbent function, long since announced by John Hunter, to be accelerated by pressure; and more lately, Mr. Young has taken advantage of this property, for the cure of certain tumours. Daily facts, too, prove it. In consequence of pressure upon an ulcer of the toe, the lymphatics of the leg will inflame, and occasionally abscesses form, either in the ham or the groin. Nor do we find it otherwise in dropsy. The skin becomes thinner over the whole body, and the instances of ascitic patients are innumerable, in whom the abdominal muscles have been nearly indistinguishable. This is always attributed to pressure, or as it is more usually called, to distension, but which, in fact, is nothing else than the pressure of the fluid against the walls of the abdomen. Here, then, again we find the absorbents active, and there is therefore no room left to ascribe dropsy to diminished absorption, except we also ascribe to the absorbing vessels a power of choice; an assumption utterly unsupported, either by direct proofs, or by analogy. The little probability, likewise, of their having such a power, is shewn in many cases of ædematous swellings, which disappear shortly before, or immediately after death, for this can only occur through the absorbents. If, then, they do not reject it when the other functions have ceased, there seems very little reason for supposing that they rejected it when the circulation was active, and constantly calling upon them for supply. We here, then, arrive at some conclusions.

First.—That the absorbents do not usually participate in the debility of the general system.

Secondly.—That emaciation goes on in dropsy, equally rapidly as in other diseases, thus shewing that in this respect, the absorbents are not inactive, and that we cannot suppose them inactive or enfeebled, even with respect to the accumulated fluid, unless we attribute to them a power of choice.

Thirdly.—That there seems no sufficient reason for supposing such a power, seeing that the absorbents do not reject the accumulations of water after death, but frequently remove them; and in coming to this conclusion, the non-refusal of the absorbents of the most acrid poisons is purposely omitted, since it might be argued that these vessels might reject the dropsical fluids nevertheless; although, not being able to asssign any use to this power of choice, except to refuse hurtful things, and finding hurtful things not refused, would form at least a rational ground of doubt, not to say of entire disbelief.

While thus, however, the arguments seem to predominate against diminished absorption as a cause of dropsy, there are many facts strongly proving that secretion may be a cause. That secretion may be increased every one is aware. Thus the

secretion of tears is often very rapid and copious. In many mental affections, the urine is greatly increased in quantity. The effect of stimulants is often to increase the local secretion of the parts to which they are applied. Saline purgatives, for instance, give a number of watery discharges from the bowels. The application of stimuli to mucous surfaces, is generally followed by an increase of their natural moisture. Thus, persons unaccustomed to take snuff, are often seized with a temporary catarrh after taking it. So far, therefore, we are authorized to conclude, that secreting surfaces may pour out their peculiar fluids to a very considerable degree, without the necessity of absorption being at the same time diminished. Hitherto, the word secretion has been employed to designate this increased fluid, but though it takes place only in secreting surfaces, there may be some doubt whether the term "secretion" is applicable in its strict sense. This will, of course, greatly depend upon the meaning attached to it. If, by "secretion," only those separations be understood which occur in a state of health, or in which a new product is formed different from any part of the blood, from which it must, nevertheless, be derived; and by "an increased secretion," a greater quantity of the natural fluid or such product, there will appear much reason to question the propriety of its application to all dropsical accumulations; but if the separation of any fluid be meant, then of course it may be employed. But as thus designating by the same word two things essentially different, must lead to some confusion, it seems better to confine the word "secretion" to the separation of healthy or depraved humours, and to designate the separation of fluids resembling certain portions of the blood, and in which, at any rate, the process of secretion is very imperfectly carried on, by the term "effusion." Now, it is not a matter of indifference in the explanation of the phenomena of dropsy, whether the accumulation be the consequence of secretion or of effusion, for in the former case, the secreting vessels, or the function at any rate of secretion must be still subjected to the nervous influence; as upon that Dr. Philip has shewn it to be completely dependent; whereas, if it be merely effusion, it is plainly withdrawn from it. To determine this question, it is very evident that we are dependent upon our knowledge of the nature of dropsical accumulations. If we find them similar in composition to the natural secretion, they must be considered as merely augmented secretions; but if, on the contrary, they are unlike these secretions, and very nearly resemble the serum of the blood, it seems most probable, to say the least, that they are really effusions. On this point the older pathological authors afford us little or no information. If we search through Bonetus and Morgagni, we find observations respecting the colour, and that in this respect the fluids vary very much among themselves. Thus the hue is said to be sometimes citrine, sometimes brown, turbid, or milky. They noticed also that they contained very different quantities of solid or coagulable

matter; but their knowledge terminated here, nor did chemistry at that time enable them to proceed further. It is to modern chemistry, therefore, that we must look for an elucidation of this very intricate question, and the labours of Berzelius, Marcet, and Bostock, have thrown considerable light upon it.

In the commencement of his analysis of the fluid of serous membranes, Berzelius observes, that in a state of health they are never secreted in sufficient quantity for investigation, and every one accustomed to the examination of bodies, must be aware of the truth of the remark. It is only, therefore, when effused in disease, that it is possible to obtain any. The secretion thus obtained, according to the above-mentioned chemist, consists of serum deprived of $\frac{2}{3}$ to $\frac{3}{4}$ of its albumen; the fluid from which he drew this conclusion, was that of hydrocephalus, which he says "probably approaches nearer than any other of the morbid effused fluids, to the natural state, on account of the short duration of the disease, and the little time to which the fluid is exposed to spontaneous change within the ventricles of the brain." It does not appear always, however, to contain this coagulable matter, for Dr. Carmichael Smythe has recorded one instance in which it evaporated by heat, leaving no residue whatever; and this seems much more similar to the natural secretion, than that analysed by Berzelius, for upon exposing a secreting surface to the air, it becomes quickly dry, leaving nothing by which its nature may be judged of. It is therefore different from effused fluids in containing no coagulable matter.

If, however, they seem to differ from the natural secretion, the analysis of Drs. Marcet, Bostock, and Berzelius, shew them to have a great resemblance of the serum of the blood. "The prevailing animal substance," says Dr. Marcet. "not only in serum, but in all the morbid effused fluids, is albumen or coagulable matter, which substance, however, these fluids contain in very different proportions."

"In all of them, also, another kind of animal substance, which may be called muco-extractive matter, is universally discoverable." Gelatine is not discoverable in any of these substances. The specific gravity varies, and different specimens of the same fluids vary, which is especially conspicuous in serum of the blood. Similar differences are also observable in dropsical accumulations. The variations in the saline contents are much less, indeed they are, upon the whole, remarkably uniform; whatever differences may exist, relate to the quantity of animal matter. The proportion of saline matter, yielded by the various animal fluids investigated by Dr. Marcet, was generally between eight and nine grains in a thousand grains of the fluid, and the ingredients were similar in every fluid. In these results the analyses of Dr. Bostock and Berzelius very nearly coincide.

Whatever, therefore, may be the nature of the healthy secretions of serous membranes, we have no evidence that they are the same with these diseased accumulations; and resembling so

nearly as the latter do, the serum of the blood, there appears reason to believe that it is effused mechanically, and that a very small portion has been submitted to the secreting process. It is very easy to believe that the thinner parts of the fluid will escape first, and that the coagulable matter will be greater in proportion to the duration of the complaint. And this may happen from two causes, first because the vessels will become more and more relaxed, and secondly, because the absorbents will probably take off the thinner parts of the fluid. Secretion also may go on, though imperfectly, and thus, though the secerning vessels may bring abundant materials, the changes necessary to render it a true secretion, may be very inadequately wrought.

That the exhalent vessels are capable, under particular circumstances, of extreme relaxation, is amply proved by many pathological facts. There are instances on record, one of which is mentioned by Bichat, in which the exhalent vessels became so relaxed, as to permit the blood itself to pass through, and those petechial eruptions, in which there is reason to believe that the blood has undergone some change, seem to indicate that the blood poured out from the extremities of exhalents. They are usually at first very minute, scarcely exceeding a pin's point, but as the weakness of the system increases, the extreme vessels seem to become more and more relaxed, and the petechiæ extend in size and number: or if the health improves, no farther eruption takes place. In purpura hæmorrhagica also, the hæmorrhage frequently takes place from the whole surface of the schneiderian or other mucous membrane, and it is difficult to conceive that this can take place in any other way than through the relaxation of the extreme vessels. If, moreover, we suppose that there are no per se secerning vessels, but only organically disposed pores; this doctrine of mechanical effusion has still more probability.

Supposing dropsical effusions, then, to be the result of mechanical effusion, and not secretion, in the strict sense of that word, it remains to explain in what way it takes place, and what conditions of the general system are necessary for its occurrence.

It is evident, then, that effusion could not happen without a relaxed state of the exhalent vessels, and such relaxation may have place in two ways.

First.—It may be a simple relaxation, no alteration whatever occurring in the action of the preceding series of vessels; and such a state we may expect to find in chronic diseases, in which the effusion or infiltration, (a word much more expressive of the phenomena in this case,) takes place very slowly. For here there is no additional energy exerted in the circulating system, but the infiltrated fluid merely escapes through the open pores, less resistance than usual to its passage being opposed. It is thus that we may explain the occurrence of effusion, after excessive bleeding, or during the debility induced by diseases of the heart and other viscera, (no mechanical obstruction being

opposed to the course of the circulation.) The circulation generally is much lowered and weakened by the previous sufferings, but the extreme vessels are more weakened still in proportion, and permit the escape of the thinner part of the blood. From the same cause it happens, that the earlier progress of dropsy in chronic diseases, is very slow, and towards the termination, on the contrary, the increase in size is rapid. In patients suffering from chronic hepatitis, the augmentation in size is often slow, till a short time before death, when the abdomen and integuments become enormously distended; the relaxation of the exhalents, and the consequent effusion of disease, having increased with the general debility. Again, in amenorrhæa, the infiltration commences slowly, and proceeds in an exact ratio with the disorder; and because the passage backwards to the heart, from the lower extremities, offers more resistance than the passage through the secerning vessels or pores, the first symptoms of dropsy are observable in the ancles and feet.

Secondly,—Without any previous weakness of the extreme vessels, there may be such a powerful increase in the action of the preceding series, as forcibly to distend them, and as the excessive action may be partial, so may the effusion, neither must it necessarily commence in the lower part of the body. Thus, therefore, in another, but equally efficient manner, a road is opened for effusion.

It is in this way, we can account for dropsy after inflammatory diseases, in which, probably, as Dr. Parry has suggested, it is an effort of nature for the relief of the complaint, and most persons must have seen cases in which effusion has appeared to prevent mortification. Puerperal peritonitis occasionally terminates in effusion, and with the effusion the pain is relieved. Now, as in such instances, the effusion is the consequence of high action in the series of vessels preceding the extreme vessels, which last are weakened, and at length yield, it is easy to understand how bleeding affords relief, because it is necessary to lower the power of the circulation, in order to permit the exhalents to recover their natural tone; and if bleeding, or some analogous means, be not employed, the effusion will continue to increase, and the extreme vessels become more and more relaxed, till their restoration is totally impossible. Accordingly, it is often discoverable from the history of dropsical cases of long standing, that they had had an inflammatory origin, which in the latter stages are inevitably aggravated by determined antiphlogistic treatment. Such species of dropsy are always produced rapidly, and so great often is the relaxed state of the extreme vessels, that even blood has been found in the urine, a circumstance which Darwin, Wells, Blackall, and Abercrombie, agree in referring to dilatation of the exhalents.

In what has been hitherto stated, no notice has been taken of any other than the circulating system; but as the universality of the nervous chords is a presumptive evidence of their universal im-

portance, it must be evident, that whoever attempts to explain the mode of the functions, without taking them into account, will leave his work incomplete.

That the secreting power of the nerves does not contribute to the production of dropsy, appears at least probable from what has been already said; but these chords have also an influence upon the walls of the vessels, and to determine this question, it is necessary to examine the opinions laid down by Dr. Wilson Philip.

This acute physiologist states in very broad terms, that the secreting vessels are merely the carriers of the fluid afterwards to be subjected to the nervous influence, that they are influenced by, but independent of, the nervous system. If the only proof of this influence were in affections of the mind increasing secretion, it might be allowed to be only occasional, however improbable it might appear from analogy. Analogy is, indeed, evidently against it, for the irritability of a muscle is always resident in it, although it may be more or less manifested at different times. But Dr. Philip has himself mentioned a pathological fact, which strongly tends to refute the doctrine of the independency of the secerning vessels upon the nervous system. This is the profuse perspiration attending on apoplexy, which he rightly refers to the extreme relaxation of the exhalents. But if, for their due action, they are entirely independent of the nervous system, why should such a derangement occur from injury of that system? It seems evident, indeed, from this circumstance alone, that they are more than occasionally influenced, and that they are dependent for their tone upon the due operation of the nerves. Nor farther do the experiments of Dr. Philip warrant his conclusion regarding the extreme vessels, because whatever might be the effects of the means he employed upon those capable of, or naturally containing red blood, he never witnessed their results upon the extremities. He asks, indeed, "Can we suppose that the vessels of secretion, which are only a continuation of those of circulation, all at once assume a different nature?" The improbability of this, however, is not so great as this learned experimentalist seems to suppose, for if their office be different from common blood-vessels, there can be no absurdity in supposing them to be differently constituted. But for our present purpose, it is not necessary that they should assume a different nature. It will be quite sufficient to allow, what Dr. Philip himself, perhaps, would not hesitate to do, that nerves may be more plentifully supplied to the extreme vessels, than to the trunks, from which they proceed; and when we consider that the former are more withdrawn from the power of the heart, than the latter, it would seem important that they should have originally more nervous energy, to compensate for their distance, from the power of that organ. Portal, also, has noticed that dropsy is sometimes the consequence of opium and other narcotic plants, "which in diminishing or extinguishing sensibility in the extreme vessels, may equally diminish or suppress the functions of secretion or excretion."

Now, unless the exhalents are dependent upon the nervous system for their tone, it is difficult to assign any reason for their being affected by drugs, which destroy sensibility. It seems somewhat strange that Dr. Philip should have laid down so strongly this doctrine of the exhalents being influenced by, but independent of, the nervous system, because he himself has elsewhere plainly indicated the possession of two actions by the nerves, one affecting secretion, and one acting upon the parieties of the vascular system. After all, it must be confessed that there is something exceedingly indistinct, not to say confused, in the whole doctrine thus proposed by Dr. Philip, for if either the exhalents or their trunks be independent of the nerves, they are independent of their influence, but if they are influenced by the nerves, they are not independent of their influence, and consequently not independent of the nerves, so that the latter part of this opinion is contradicted by the former, and the former by the latter.

If, then, there is no reason to consider the exhalent vessels as withdrawn from under the control of the nerves, it will be easy to assign their place in the production of dropsy, and to explain how this disease may take place in a plethoric and in an exhausted state of the constitution.

Our knowledge of the laws of the nervous system, more especially of that part which constitutes the brain, teaches us, that the nervous energy may be impaired in two ways, either by exhaustion or repletion. The former of them is exemplified in the debility consequent to long illness, wherein the whole muscular power is for a time completely lost. By those who do not admit the muscular power to be dependent on the nerves, this instance will not, perhaps, be admitted as valid; yet even they can scarcely deny the phenomena of syncope to illustrate this kind of debility, since on all hands it is attributed to a deficient supply of blood in the brain, and the remedies usually employed are such as are calculated to increase the circulation within the skull. But even sanguineous apoplexy affords some proof, that the nervous energy may be impaired independently of the injury the brain may have sustained; for when the too vehement action of the circulation has been reduced, much debility remains, although there may be no reason to suppose extravasation; and even where this has occurred, stimulants have, after a time, been found highly serviceable, which can only be explained, by supposing the nervous power to be something different from, though influenced by, and reciprocally influencing, the vascular system. That the nervous power may be diminished by repletion, needs no illustration. The prejudices and fashion of the day are in favour of this as the only source of debility. We have now to apply the above observations to explain the place which the nerves hold in the production of dropsy.

This may be done very shortly, for that which holds good of the whole, must hold equally good of each of its parts; and if the general nervous system may be exhausted or oppressed, so

may every part of its branches. As, therefore, the exhalents are influenced by the nerves, we may also expect them to be influenced by their changes, and effusion, therefore, may take place from their being weakened, or from their being oppressed. There are several facts also, which shew most powerfully, that dropsy may be produced by affections of the nervous system. Dr. Bateman relates a case of anasarca in a woman previously in good health, produced "by extreme fright and alarm." But as this was not dependent upon any organic affection, it was quickly removed by tonics combined with diuretics. Hoffman has enumerated also the "animi pathemata" among the causes of dropsy. Anasarca, likewise, is a very frequent consequence of paralysis, and this disease is scarcely ever of long duration without the occurrence of ædema in the lower extremities; and it seems impossible to explain this, without allowing the exhalents to participate in the feebleness of the general system. There might appear, perhaps, some reason for believing this ædema to spring from debility in the absorbents, but neither in paralysis, more than in any other disease, is there the slightest ground for supposing these vessels to be weakened.

It may, perhaps, be as well to remark here, that where dropsy is the consequence of obstruction in the venous circulation, the exhalents are most probably in a state of simple debility, and as this debility is the effect of mechanical dilatation, it will be plain that the first indication of cure must be to act upon the obstruction, not on the exhalents.

The general facts which the preceding paper appear to indicate, are,

First—That dropsy is not the product of diminished absorption.

Secondly—That it is not secretion, in the true sense of that word, though, at the same time, it takes place through the secerning vessels.

Thirdly—That for the most part, it seems to be a mere mechanical effusion.

Fourthly—That the effusion may take place in two ways, either by weakening the exhalents themselves, or from an increased action in the preceding series of vessels.

Fifthly—That there is reason to believe, that the nervous system bears a great share in these phenomena, and that to a diminution of that tone, which in health, it gives to the exhalents, we are to look for the immediate cause of the effusion.

The theory of dropsy now proposed, may serve as a rational guide in the opposite origins of this disease, and unless a theory can be thus employed, it is worse than useless.

The great tenacity of the absorbent system in the preservation of their functions, though manifestly rendering it inadequate to the production of dropsy, is of the highest use in its cure. There are, indeed, no means by which their action can be directly influenced, but being necessary to the sanguiferous circulation, the absorbent function may, through this, be most energetically

increased. But the sanguiferous is affected by the secreting system, the latter drawing from the former, and the former being supplied by the absorbents. Whenever, therefore, the digestive function does not afford to these last a sufficient supply, they must seek elsewhere for it, and thus it happens that as secretion is carried on with more activity either in the urinary organs or the intestines, the accumulated waters are diminished. Again, secretions are greatly vicarious, so that the quantity of fluid determined to the excretory organs, necessarily diminishes the rapidity of effusion, and gives the exhalents of the part in which the effusion has occurred, time to recover. We thus see, therefore, the action of diuretics. They act upon the kidneys, these draw their supply from the blood-vessels, these again are replenished by the absorbents. But when by these means the accumulation has been dismissed, it may again and again re-appear; if either the exhalents are of themselves unable to regain their tone, or if an obstacle presented to the venous circulation, like that in the experiment of Lower, should by force keep them dilated. Hence, in cases of schirrous liver, or other organic diseases, there is little chance of a permanent removal of effusion. On this account, therefore, we have not merely to remove the fluid, but to strengthen the exhalents and increase their tone. Where these are weakened by the excessive action of the communicating blood-vessels, it may be sufficient only to reduce that action, and the exhalents will probably recover themselves; but when their weakness depends upon a debilitated system, tonics of some kind or other will be required to prevent the recurrence of effusion, after it has once disappeared; and where it is connected with disease of any particular organ, as the liver, the heart, etc. our first care must be directed to remove or relieve that disease, as till then no success can rationally be expected in endeavouring to give tone to the exhalents.

ARTICLE II.

On Prophylactics, or the Prevention of Disease.

BY RICHARD JONES, M. D., KIDDERMINSTER.

When disease is fully established, it is not to be supposed that those who may not have dedicated much time to the study of medicine, can be capable of using the proper methods of treatment; more especially as even the experienced physician is occasionally doubtful as to the exact line it may be necessary to pursue. Hence, all popular treatises on disease are liable to the objection, that on some occasions they give too much confidence to the reader unskilled in the nature of the human body and its varied states; or on the other hand, they are apt to lead us to numerous privations or apprehensions, which a more complete knowledge would readily dispel.

But the knowledge of the prevention of disease is much more important, as well as available, to the non-professional, than that of the treatment of an actual malady; and if, instead of those vague efforts which a natural and unavoidable ignorance of the science of medicine produces, some general principles could be laid down and applied to the more important cases, it is presumed that a general and practical good would be gained by the public, who are so much interested in the present subject.

Whilst a person unaccustomed to study the laws of the human frame, is diligently concerned to avoid the occurrence of disease in himself or those around him, it is evident that he may often direct his attention to that point which the enemy is least likely to invade; or by an overwhelming anxiety, he may produce disorder when no real disease might have happened. In fact, whilst one form only of the same complaint engrosses all the attention, a nearer cause of apprehension may not only escape detection, but be fostered into strength by the means which we had hoped were annihilating our only cause of fear. A knowledge of the principles of the animal economy, as connected with disease, is therefore more important than that of any one complaint, and for this reason the general principles will be more insisted upon in this essay than any particular malady.

But physicians have not unfrequently to lament a delay by which a valuable advantage of time is lost; and not less often do they meet with cases where their attendance might have been dispensed with. Some guide, therefore, which shall tend to determine the mind of the individual on just principles as to the necessity of medical attendance, is as desirable as it is difficult to provide.

To attain these ends, the present treatise has been undertaken; which, if any one expects to find perfect, he must necessarily be mistaken, though some good may be attained by drawing the attention to the phenomena which form the objects of a beautiful science, and must very nearly interest every man in his turn.

Of the nature and prevention of maladies of the vascular system.

The vascular system is so generally spread through the body, that no disease can exist in any part without influencing the blood-vessels to a greater or less degree; and hence some physicians have been inclined to derive all maladies from inflammation. This inference, though excessive, is so far true, as to make it absolutely necessary that we should, on the outset, be made acquainted with the nature of the affection in question.

We suppose the reader to understand, that the blood is propelled by the heart, and a certain power in the vessels, through the arteries into the small vessels, where it undergoes various changes, and being deprived of certain parts, returns by the veins to the heart; and after its due elaboration by the lungs, and the reception of the aliment, again performs its first office, which continues as long as life remains, with but little variation.

The activity of the whole, or of part of this system, may be depressed, or the progress of the blood entirely stopped, either by a violent impression on the nerves, or by a mechanical obstacle.

When a part of the vascular system labours under this depression or stoppage, the obstacle thus presented to the free transmission of blood, produces what is called a *congestion*, or accumulation of the fluid, in or near the part affected. This congestion, when it has arrived at a certain height, remains stationary, because the parts cannot by possibility receive any more of that blood which should have passed through, but is now thrown upon the larger vessels leading to the congested part. This unwonted stimulus causes an increase of action in these large vessels, as if they were striving to break through the opposing force. At this period, the state of *inflammation* is established, consisting in an increased action of the large, and a diminished energy of the smaller vessels of the part.

But if this derangement occur to a sufficient extent or intensity, the whole of the circulation cannot fail to become implicated, and *general fever*, *symptomatic* of the local affection, arises.

Physicians, however, generally admit of another species of fever, which may, if we take heed not to receive the word with any prejudice connected with particular theories, be denominated *idiopathic*.

In this case, the larger and more important parts of the circulation become affected first, either by such a considerable excitement as shall at once induce a general commotion of the vascular system, or by a cause that shall depress the heart and arteries, and necessarily induce a considerable subsequent re-action. Heat and over exercise are instances of the first mentioned cause, and the influence of cold or contagion exemplifies the latter.

Here, if any part be predisposed by weakness, or any such state as shall render the passage of the blood difficult, a *congestion* or *inflammation* is likely to take place, which is in this instance said to be *symptomatic* of the fever.

In civilized society, the head is most obnoxious to this symptomatic affection, probably on account of the continual use of the intellectual organ.

The vessels of any part, or of the whole of the system, may be excited, merely, without fever or inflammation being necessarily present. Exercise, when moderate, quickens the action of the arteries, as well as of the veins, but the cause being removed by rest, the blood resumes its ordinary course.

In fever, when the re-action has been violent and long continued, an opposite state of depression, called *collapse*, may ensue, which may terminate in death.

In like manner, inflammations may terminate in collapse, and eventually in death, of the part; or the action of the smaller vessels may be modified, so as to separate various fluids from the blood. Thus the terminations of inflammation are said to be death or *mortification*—the separation of the blood into parts,

which is called *effusion* of a fluid, or the obstacle may be overcome, and health ensuing, a *resolution* of the inflammation is said to occur.

Chronic inflammations are slower operations of the same kind, where the obstruction and re-action are less complete, but where, from the time that elapses under these irregular circumstances, a more finished and complete process usually takes place; whence are derived the more elaborate growths and effusions common to this state.

These, then, are the essentials of the states of inflammation and fever, proper to the human body, and we shall now have to consider the external causes which, together with the organised structures, produce the whole effect. It is evident that the prophylaxis consists in the prevention of those externals from acting on the vital frame to the production of the dreaded effect.

Any cause calculated to impede the action of the smaller vessels of a part, renders it liable to the state of congestion, under fit circumstances, and this is the clue to our preventative measures on this occasion.

Debility, cold, unequal pressure, excessive fatigue, the action of heat, and of many chemical agents, produce congestion, either by directly impeding the circulation, or by disabling the vessels of the part by oppressing the nerves.

When the state of congestion is established in any one part, or in general throughout the vital organs, it is necessary to relieve these by strengthening them, and by unloading them of the accumulated fluids.

When the state of congestion is fully established, it is known by a depression of the vital powers of the part, by chilliness, shivering, occasionally a numb pain, and if general, by that feeling of depression which is attendant on the first stage of a cold.

It by no means necessarily follows, that when congestion is present, inflammation should occur, consequently we have yet to explain the preventative methods to be made use of.

We may unload the congested parts by the direct abstraction of blood, or we may increase the action of the large vessels so as to overcome the obstruction, or in some cases, we may stimulate the affected part itself, so that its small vessels, by an augmented effort, may expel the accumulated fluid.

When we take away congestion by leeching, or by producing discharges from the skin or alimentary canal, or use any means of diminishing the quantity of the blood in the particular part, we practice the first mode of cure, and of prevention of inflammation.

When a man, immediately on perceiving the occurrence of a cold, takes a strong glass of brandy and water, or of wine, at bed time, and rises free from all disease on the following morning, he has been cured by the second mode of procedure, or, as it is technically termed, by increasing the "*vis a tergo.*"

When a frozen limb, or a contusion, is subjected to friction, stimulant washes, or certain poultices, we observe the third mode.

It must be obvious, that any measures which increase the force of the circulation generally, without diminishing the congestion, will induce that state which we are most anxious to avoid, since it is no other than what has been described as inflammation.

It is evident, that the same principles apply to congestion of the larger and more important parts of the system, especially to the congestion in the right side of the heart and venous trunk, which is likely to prove the commencement of general fever. The object in this case, is to procure a more equal distribution of the blood, by exciting the vessels to throw off their load, by recalling the blood to the surface, which it has left pale and cold, or by unloading the veins by actual bleeding.

From this view of general congestion, it will be seen that the vital organs suffer under an unnatural and deadly load, which is easily apprizable by those who have seen persons after a violent shock, or in the cold stage of fever. But the re-action, if excessive, brings no relief, and that this may be properly regulated, or prevented from assuming a dangerous form, the judgment of a skilful physician should be made use of.

The prophylaxis of fever arising without congestion, and idiopathically, consists in avoiding excitement; but the most important object is, to observe that no part of the body shall be so weakened or obstructed, as to induce a symptomatic congestion or inflammation during this state of commotion.

The parts most obviously exposed to this secondary affection, are, the head, from anxiety or mental exertion, and the stomach and bowels from fullness or improper contents. Probably when cold has been the cause of the fever, the lungs are most likely to be affected secondarily.

In many cases, therefore, we may prevent serious consequences, by keeping the head cool, by clearing the stomach and bowels, and by exciting the action of the skin, which is very closely related with the lungs in a physiological point of view. By these means, also, a facility is given to the vital organs of throwing off the oppressing fluids, by one of those natural discharges which are termed *critical.*

For the production of a general congestion, a certain weakness or depression of the vital powers must exist; which we are, therefore, to guard against, and hence it is necessary to point out all the causes from which they may arise.

From the shivering and paleness of persons attacked by congestion, (the reasons of which we now understand,) all inflammations and fevers are, by the vulgar, attributed to cold, which, however it may increase the disorder, is nevertheless not so often the real cause, as is generally imagined.

Over exertion, contagious influence, mental shocks, a debauch, and the numerous causes that induce congestion, are overlooked,

because the feeling of cold gives the first notice that disorder is established. But from the rules already laid down, it must be obvious that cold, from its depressing effect, will aid the prostration of the vital powers, by any other cause, and therefore, under the above-mentioned circumstances, temperature forms an important means of prophylaxis.

We are now prepared to understand the action of contagious influence, and the best methods of prevention. This influence acts through the nerves on the vascular system, so as to depress it to the state of congestion, whence it arrives that vigorous and robust people are less obnoxious to contagious fever; since they can resist a shock capable of depressing a body of a contrary constitution to the greatest degree. One circumstance must be noticed, however, that when strong people are attacked by inflammation or fever, the disease is generally more violent, as, in them, the depressing cause must have been great to induce the complaint, and by the strength of their vital powers, the re-action is proportionately more violent. On the other hand, persons of a weakly habit are more subject to inflammations and feverish affections, which are of a less violent nature, and of a slower progress; and it is hardly possible that any person should be so weak as to be incapable of producing that re-action called fever, or inflammation, in a greater or less degree, unless the first shock were fatal from its extent or severity.

As a general law, it may be assumed, that full health and strength are the best preservatives against all fevers, and any seeming exceptions arise from a real refraction of the rule. When a strong constitution yields quickly to the influence of contagion, we must look for some great cause of depression, physical or mental, which has previously occurred; and if a weakly habit appears to remit, it is to be attributed to a dull and feeble state of mind and body, which indisposes them to that exertion likely to be succeeded by collapse, or to a want of due sensibility in the nervous system.

Cleanliness, as a prophylactic, cannot be too strongly insisted upon; not as I imagine because the contagious matter can accumulate and overwhelm the individual, or be disposed mechanically, ideas which have arisen as it would appear from a gross analogy. But the truth is, that bad smells, close air, and filth, tend to depress the vital functions to the state of congestion, or cold stage, which precedes fever, and is completed by the contagious influence. When the nurse, therefore, falls ill with the cold stage of fever, on the occurrence of a nauseous smell, the odour itself is often said to be infectious, when in reality, it only reduced the vital powers to that state of depression fit for the contagious influence, an independent and pre-existing cause to enter into relation with.

These principles being well understood, are not only useful in themselves, but form the basis of the prophylactic reasons which we shall have occasion to advance, when treating of other maladies, to the consideration of which we now pass.

The diseases proper to the heart and arteries, and other circumstances connected with the vascular system, are rather subjects of consideration to the professional man, than to the public at large.

Of the Prophylaxis of disease of the Skin and Mucous Membranes.

Anatomists have reduced all the animal materials to certain elementary *tissues*, which, in various combinations, compose all the organs of the body. These tissues are subject to the same diseases, in whatever compound organ they may take place; and when disease leaves one tissue, to proceed to another, even in the same organ, it is no longer the same disease. At the same time the nerves and blood-vessels must be more or less concerned in all tissues.

It will be seen that diseases of the mucous membranes are exceedingly numerous and important, and as they are intimately connected with the state of the skin, it is advantageous to treat of them together. The skin is well known as the covering of the body; but it is not so generally considered, that when this covering becomes reflected into open cavities, it changes its appearance, and in some degree, also its qualities, to become mucous membrane, in which form it lines all cavities that open either directly or indirectly, to the surface; so that in fact, the present structures include no less than the whole extent of membranes exposed to external stimulants, some more immediately, and others of them less obviously.

The skin, the mouth, the air passage, the throat, the stomach, the bowels, the urinary organs, together with the biliary system, and others assisting the digestive organs, are all united by this tissue.

From the circumstances of this system being connected with so many organs, we find that it affects nutrition as well as excretion, and it covers, under several modifications, those parts of the body that are endowed with peculiar sensation; and under all these circumstances, a fluid is secreted, for which purpose it is supplied with numerous blood-vessels and nerves.

When any part of the system of the skin or mucous membranes is stimulated, an attraction of fluids to the spot is the consequence, which become more or less accumulated at, or near the spot; when the stimulant is very powerful, or continued for a length of time, either the fluid is evacuated, as by perspiration, or some flux; or the accumulated fluid subsides, or a *congestion* or *inflammation*, such as I have described above, may take place.

The causes of excitement are, foreign bodies in excess, or of hurtful properties; or the fluids secreted by the membrane may irritate, by being retained, or of some acrid nature; or an accumulation of fluid may occur, from unequal distribution of the blood, by reason of a stoppage in a remote part of the body, throwing a load on the vessels of the mucous membranes.

In these cases, the secreted fluids of the blood are often changed into improper and hurtful stimulants.

But it is proved by experiment, that though the vessels will secrete fluid, even when the communication with the nerves is interrupted, yet in that case, the nature of the secretion is entirely changed; and we find also, that the secretions are exceedingly liable to alteration, and the whole economy of the membrane to disorder, without either congestion or inflammation being present. This occurs from a morbid condition of the nerves, the *modifiers* of the secretive process.

Generally, the diseases of the skin and mucous membranes, may be comprehended under the three heads; those caused by improper stimuli, by accumulated or vitiated secretions, and lastly, those which arise in some other part of the body, which indirectly injures the functions of the parts under consideration, which last is generally either from sympathy, by blood-vessels, or by nerves, especially with the brain, which is so constantly active in civilized life.

The skin is very obviously exposed to external stimuli, and to its own vitiated secretions, in consequence of which the pores are stopped up, or eruptions are produced, to the end not only of injury to the skin itself, but eventually of causing disorders of the internal parts of the body. It is the skin which is most exposed to variations of temperature, and we find that if excessive cold produces a congestion, so heat will induce an altered sensibility of the skin, that shall likewise, at length, lead to inflammation, either of an acute or slow kind.

To those persons who suffer under diseases of the skin from a peculiar stimulus connected with their employment, as bakers, grocers, and the like, cleanliness and the discontinuance of the cause, is all that can be mentioned as a rational preventative. To the mass of mankind, it may be said, that their great object is to avoid sudden changes of temperature, and to clear the body of its own secretions, and of external irritants, by washing.

The same reasons apply, perhaps even more strongly, to the surfaces of the stomach and bowels, which, especially in civilized life, are liable to a detention of their contents and secreted fluids, that irritates them, and may produce congestion and inflammation, as well as a morbid sensibility unconnected with these disorders. The most obvious means of prophylaxis in this case, is to take sufficient exercise, and to make use of food that shall counteract the prevailing mode in which the irritation shows itself. The use of medicine is not to be recommended unless absolutely necessary, or otherwise a habit will be confirmed, by which the due action will never take place, without the use of these stimulants; when these are positively indispensible, we should not make use of the more violent cathartics, and we should aid, by a mild and simple diet, as well as by exercise, their operation. The old rule to solicit these evacuations at certain periods of the day, is exceedingly correct, and ministers both to the comfort and health of the individual.

time, the bowels are often in a state of irritation, by improper food, costiveness, or intemperance, and the liver participating in the disorder, a flux takes place, till the balance of the circulation is brought about naturally, or by artificial means, such as by restoring the discharge from the skin; or the whole may end in great congestion or collapse. If the discharge be suddenly checked, without taking heed of the state of the fluids, violent febrile symptoms generally come on, often attended by a local inflammation, or occasionally *idiopathic*.

The prophylaxis of this prevalent disease is at once seen when the cause is apparent. Those who have to apprehend it, should take on flannel early in the season, as soon as the autumnal days begin to change, from their oppressive heat at noon, to cold in the evening. The bowels are to be kept free, and not irritated, and the pores of the skin should be excited by gentle exercise, with the strictest care, however, that they should not be closed suddenly by exposure to cold.

It is well known that damp weather is generally productive of disorder in the mucous membranes, because the fluids are not carried from the skin, and are therefore thrown on the internal parts.

In the Spring, when the weather has a tendency to change from cold to warm, the vital functions become most active, and in this case, if the circulation in the body be checked, the weight is thrown on the lesser circle of the system, which is in the lungs, and the natural functions are not so liable to disorder as in autumn, unless in the case where the vital functions are unusually slow, or from some peculiar predisposition. The reason is not less difficult in this case, nor does the prophylaxis differ materially. The skin should be kept warm. Stimulants should be more carefully avoided than in autumn, when they are by no means so injurious, and above all, the feet should be kept dry and warm.

It is a common custom among the vulgar, to get bled in the spring, and I trust the reason of their being driven to this measure, is now sufficiently apparent. But unless there be an absolute necessity, such means are decidedly to be avoided; since a habit is thereby acquired, that proves dangerous in the extreme. Plethora is rather to be diminished by regimen, and occasionally by soliciting discharges from the mucous membranes and skin.

Whenever these circumstances tend towards a fever or inflammation, then those prophylactic means which we have already enlarged on, are to be observed.

It must be remembered, that in all times of the year, these diseases may occur, as their causes act on the body, while it must be remembered also that identical causes of external origin, may produce fever in one; in another, inflammation; and in a third, a flux, according to his internal pre-disposition; and hæmorrhages are produced by the causes that bring on inflammation, in those who are liable to them, let the attention be directed to the principles here laid down, especially those con-

prompt the individual to shake off the injurious custom, and adopt the prophylactic measures.

For the reasons we have explained, it is evident that stimulants taken internally, will afford a partial relief to the complaints arising from sluggishness of the system; hence it becomes a necessity for these people to take wine or ardent spirits, and this necessity is the secret of many habits of drinking, especially among females.

It appears to me that this affection, from this simple cause, should be carefully distinguished from what may be called the truly nervous indigestion, which may occur even during the most active employment. In this case, the progress of the disorder is quite different; the secretions are seldom decreased in quantity, very often, considerably increased, and generally depraved in their nature. The appetite is various, but often increased, as also are all natural diseases; occasionally the mind is disturbed; the temper irritable; the bile increased in quantity, and particularly harsh in quality. The bowels are not habitually slow, though often out of order; the extremities are not cold, nor is the head so constantly giddy as in the other affection.

The whole of these symptoms are to be derived from one great cause; a morbid state of the nerves, from an improper action of the brain, either by intense study, or great emotion. The state of the brain of necessity influences the nerves of all parts, to a greater or less degree; and by a physiological cause before mentioned, the secretions become modified, to the detriment of all the functions of the body.

This affection may proceed to hypochondriasis, or absolute insanity; or if in time an organic injury occurs, the complaint seems to change its character, being hid in the disorder that arises from the local affection.

Much of the character of this complaint depends on the temperament of the individual, which, therefore, should be carefully observed. We must always, however, distinguish from a real character of the vital organs in general, those peculiarities of habit, or which arise from an affection of only one or two organs, but which do not admit of the appellation of temperament.

That form of indigestion which arises from the introduction of improper substances into the stomach, hardly admits of any other prophylactic measures than of a judicious abstinence from the abuse of the pleasures of the table. Whilst the sedentary man should determine to take a proper exercise, both of body and of mind, he who suffers from mental exertion, should engage in salutary amusements. But this is more easily prescribed than adhered to, and in many instances it will be more useful to point out the manner of preventing the worst consequences, than to command what the constitution of society renders impossible to obey. When a man labours under nervous and sedentary dyspepsia, it is obvious that nothing can be more desirable than the removal of the latter, at least. This is generally attempted by

the use of laxatives, condiments, and stimulants, and such an attention to food, as deprives the individual of many comforts, and that degree of ease, which is no less necessary to intellectual, than to corporeal exertion.

But the great object is to give the body general exercise, to stimulate the abdominal viscera, to give the lungs a free play, and wholesome air, and to do all this in as agreeable a mode as possible, and often in a short space of time. That mode which combines all these advantages to the greatest extent, is exercise on horseback, than which no more valuable remedy can be made use of by the sedentary men of an active mind. It would be absurd to state, that the violent labours of the gymnasium are compatible with great exertions of the mental nerves; and it is still less reasonable to bind down the literary men to stated periods of exercise, or of abstraction, although such may possibly befit that mental application which may be resolved into a nearly mechanical act of the understanding. Where deep reflection is requisite, we cannot interrupt the train because the clock strikes the hour; and if we postpone the thought, we shall find that inspiration loses half its brightness, when invited, instead of firing itself upon us. Let the dyspeptic student, if possible, mount his horse, at the time when his labours begin to overpower him, he will find that every mile gives him new vigour, until feeling a desire for his elbow chair, he returns to make a meal, not so plentiful as to give him any feeling of repletion, nor followed by such a quantity of urine as shall, after its first efforts, produce *collapse*. This will be a true economy of time, and tend to keep the mind in a state fit for exertion.

To avoid nervous dyspepsy, the individual should, above all, bring himself to the habit of forgetting his intellectual pursuits, by engaging in other employment, so soon as he is not absolutely thinking of the subject about which he is engaged. A man who can pursue three or four different occupations, not only relieves the wearied brain, but economises his resources, and is very likely to make as much out of one or two, as if he had continually devoted himself to one alone. Too exclusive an attention to one pursuit, narrows the mind, and gives it no rest, so that the judgment and health are equally liable to injury.

The base of the brain is the great nervous centre of the human body, so that when it is affected, all the nerves sympathise with it, either directly or indirectly; and this is the origin of that nervous dyspepsy so different from that variety I have denominated the sedentary.

For the diet and regimen of nervous dyspepsy, it is impossible to lay down exact rules adapted to every constitution. We cannot forbid a man to use his intellect, and we can place no bounds to his exertions, and it is therefore desirable that our prophylaxis should be as consistent as may be, with a great degree of mental employment.

I apprehend that the nature of the immediate occupation must be particularly attended to, as for instance, that the same person might live in such a manner during the composition of a poem, as would not be compatible with the study of the more abstruse points in mathematics.

With regard to stimulants, the rule is to avoid so much excitement as will produce collapse, which is likely to be followed by a re-action producing determinations of blood to the head.

In order that the intellectual organ shall execute its various operation of reflection, a due portion of blood must circulate in it, with sufficient force. Excess clouds the perceptive powers, as we see in fevers and drunkenness; defect weakens them, as we see in nausea, and during convalescence. The stimulus to be taken is, practically speaking, for each man, just so much as induces the proper flow of blood to the head.

If our object were solely to prolong existence, I should recommend but little animal food, and no liquor but water. But in civilized society, meat and wine are generally necessary to procure that great and constant exertion, to which all around stimulates the intellectual being. Grass will not support the race horse, nor will water and vegetables enable the politician or the poet, to fulfil the intense reflections, or endure the emotions and labours, of their respective situations.

So far we have endeavoured to explain that form of disease which I have called dyspepsy, from nervous sympathy, but the prophylaxis of disease of the skin and mucous membranes, arising from sympathy by blood-vessels, as I have ventured to call it, is not less important.

Whenever the functions of an organ are impeded, either by a tumour, by weakness, or many other causes, the blood which should have circulated there, sucks an outlet in some other part, on which the greater bulk of the labour is likely to be thrown, and as the skin and mucous membranes, among other offices, perform the parts of sewers to the body, it is to some part of these, that the *revulsions*, as they are called, are directed. But, if one of the mucous membranes be predisposed, by irritation or organic causes, directly bearing upon it, then the probability of its failing, when the balance of the circulation is overthrown, becomes greatly increased; and if the organ be unable to throw off the unwonted load by a flux, then a congestion and inflammation ensues. Hence the non-professional will at once perceive why it should be so dangerous to stop fluxes of many kinds, and how nothing of the kind should ever be attempted without the maturest consideration.

In Autumn, nothing is more common than that flux which is often, with little discrimination, denominated *cholera morbus*. The skin, having during summer been accustomed to throw off the fluids by perspiration, is suddenly checked in its office by the cold, or rather by the abstraction of the stimulus of heat; and the balance of the circulation is thus destroyed. At the same

time, the bowels are often in a state of irritation, by improper food, costiveness, or intemperance, and the liver participating in the disorder, a flux takes place, till the balance of the circulation is brought about naturally, or by artificial means, such as by restoring the discharge from the skin; or the whole may end in great congestion or collapse. If the discharge be suddenly checked, without taking heed of the state of the fluids, violent febrile symptoms generally come on, often attended by a local inflammation, or occasionally *idiopathic*.

The prophylaxis of this prevalent disease is at once seen when the cause is apparent. Those who have to apprehend it, should take on flannel early in the season, as soon as the autumnal days begin to change, from their oppressive heat at noon, to cold in the evening. The bowels are to be kept free, and not irritated, and the pores of the skin should be excited by gentle exercise, with the strictest care, however, that they should not be closed suddenly by exposure to cold.

It is well known that damp weather is generally productive of disorder in the mucous membranes, because the fluids are not carried from the skin, and are therefore thrown on the internal parts.

In the Spring, when the weather has a tendency to change from cold to warm, the vital functions become most active, and in this case, if the circulation in the body be checked, the weight is thrown on the lesser circle of the system, which is in the lungs, and the natural functions are not so liable to disorder as in autumn, unless in the case where the vital functions are unusually slow, or from some peculiar predisposition. The reason is not less difficult in this case, nor does the prophylaxis differ materially. The skin should be kept warm. Stimulants should be more carefully avoided than in autumn, when they are by no means so injurious, and above all, the feet should be kept dry and warm.

It is a common custom among the vulgar, to get bled in the spring, and I trust the reason of their being driven to this measure, is now sufficiently apparent. But unless there be an absolute necessity, such means are decidedly to be avoided; since a habit is thereby acquired, that proves dangerous in the extreme. Plethora is rather to be diminished by regimen, and occasionally by soliciting discharges from the mucous membranes and skin.

Whenever these circumstances tend towards a fever or inflammation, then those prophylactic means which we have already enlarged on, are to be observed.

It must be remembered, that in all times of the year, these diseases may occur, as their causes act on the body, while it must be remembered also that identical causes of external origin, may produce fever in one; in another, inflammation; and in a third, a flux, according to his internal pre-disposition; and hæmorrhages are produced by the causes that bring on inflammation, in those who are liable to them, let the attention be directed to the principles here laid down, especially those con-

cerning inflammation, and the disturbance of the balance of the circulation; and these, with preceding circumstances, will point out what the patient is to apprehend, especially when experience has already demonstrated to him his weak points.

A morbid sensibility of the mucous membranes, especially of the stomach and bowels, may be produced by improper stimuli, or by sympathies, nor does it necessarily follow, that when these causes are removed, the habit should be broken through. Whenever indigestion takes place, the style of living should be varied, nor is the most exact regimen at all times equally beneficial. The system in general requires a change, and variety of food, and the stomach is palled by a constant use of the same substances.

But above all others, the dram drinker speedily induces a morbid sensibility in the stomach, which extends to all parts of the frame. The heart, or several parts of the vascular system, are under a continual state of excitement, until at length, disease of no remediable character is established. Besides the action of the spirits on the nervous system, the stomach itself from habit, continually craves after the unnatural excitement, the absence of which, leaves a sinking and "void in the inside;" the natural stimuli come to have no effect, and at length, the gastric juice cannot stimulate to hunger. Afterwards new acts of the functional parts which allay the nerves, are produced, for the cause being modified, so also the effect is changed, and diseased structures, and dropsies, and many well known complaints, assail and put an end to the drunkard.

It is to a modified sensibility of the nerves producing new effects, that the disorder called water brash is to be attributed. Of this complaint we are not to look for any one constant cause, since many circumstances may so modify the nerves, as to produce that change in the secretion of the stomach, from which the name is derived. Tape-worms, improper liquors, and smoking, are apt to produce this effect, when the predisposition exists.

Worms chiefly injure the individual by irritating the alimentary canal, to which their effects, produced on other parts of the body, are also to be attributed; so that it may be said of them, that they are capable of producing any disease constitutional or local, that depends on constant irritation, such as hectic fever, waste, diarrhœa, and various forms of indigestion; whilst by destroying the aliment of the body, leanness generally occurs, notwithstanding that keen appetite which so often accompanies worms.

Locally, the effect of this irritation may extend wheresoever the sympathies of the stomach and bowels reach. We are not so greatly astonished, therefore, when we find a sympathetic affection of the eyes from the above-mentioned causes, by which, at one time, the pupil is rendered permanently contracted, or expanded beyond what is natural; while at another, an inflammation, exactly resembling the scrophulous inflammation, is present, and equally troublesome to cure, unless the cause be discovered and removed.

The prevention and removal of worms is a more important point of prophylaxis than may at first be imagined, and when I state, that while one kind of worm produces the most distressing indigestion and emaciation, (Tœnia or tape worm,) a second (lumbricus, round worm,) is likely to produce the inflammation in the eyes, which I have mentioned; whilst the thread worm (Ascaris) is, I have reason to believe, often the cause of consumption of the lungs.*

Nature seems to have intended that certain condiments should be absolutely indispensible to the healthy state of the alimentary canal, and however strong the constitution may be generally, still, without these, worms, among other disorderly effects, are likely to be produced. It is well known that animals, in a state of nature, hunt after salt and vegetable bitters, with avidity; and if we, by our artificial mode of life, lose that delicate sense that warns them, we ought to supply by reason, what we have lost of instinct. Supposing that due pains are taken to keep the alimentary canal clean and healthy, our great means of prophylaxis will be the use of salt; and if we wish to be still more careful, we should make use of those bitter infusions which are well known to all.

It may be proper to say a few words on the principles by which we should regulate our diet; a subject which is, however, in the present day, if possible, almost exhausted; and yet those works which attempt to particularize too much with regard to individual kinds of food, do not appear to me to be practically useful to the non-professional, who should rather be taught how to judge of the relation of articles of diet to his own economy, from general principles, as a basis on which his reasoning on his own case is to rest. Each individual has his peculiar constitution, differing in some way from all others, and therefore, to decide that one class of substances is fit for men in general, and another to be avoided, informs the individual of but little; or if he should think that it tells him much, it will lead him into a series of vexatious mistakes. It would be of little use to tell the wooden legged man, that men in general have two legs; nor is the particular information that a class of substances agree with men in general of a more precise nature, to the man who is searching after a diet to suit his stomach. To indicate the symptoms that should lead him to avoid an article of diet, or to point out that

* This opinion requires some explanation, or I am aware that it would meet with considerable opposition. The way in which these little worms have appeared to prove most injurious, is by exciting a hectic state of the circulation, during which, if a pre-disposition were present, I have observed that tubercles rapidly form, and then, though the worms be removed, the tubercles keep up the irritation and hectic with singular obstinacy, from the habit being rooted. The influence of the worm has appeared so considerable, that I consider that the non-professional should be fully aware of the probability of worms thus acting as an exciting cause in certain constitutions, if it be no more.

organ which disables him from taking a particular substance, and others of its class, is the useful and practicable method.

Instead of watching for the weak points, it is no uncommon occurrence for the individual to have recourse to a table of food, professing to set down what is *hard* and what is *easy* of digestion, by which terms are meant to be included those articles of diet which are slowly, or quickly, converted into chyme. But if nature has provided a variety of food for us, some of which may be more slowly digested, she has not by any means done so for the sake of inducing dyspepsia, nor am I afaid to affirm, that indigestion may be induced by eating exclusively, or unduly, of that food which is most speedily converted into chyme. *Easy* and *hard* of digestion, are therefore not absolutely synonymous with wholesome and unwholesome, but *relatively*, according to the powers of the particular stomach which may be the subject of our attention.

Some stomachs, of inconsiderable vigour, require a food easily convertible into chyme, which, if they do not receive, they are apt to have their energy exhausted, and then, though the food have nothing objectionable in itself, the phenomena that follow improper food appear, after a certain time, such as heart-burn, flatulence, head-ache, and other well-known symptoms.

Other stomachs that require a more durable stimulus, will be equally injured by food that is too soon digested, as if their energies were too speedily exhausted, or left too soon unemployed. This brings on a head-ache, with swimming in the eyes, and a feeling as if the air were visible, and wavering about before them. It is generally after breakfast that this is experienced, because in this country, breakfast is a light meal in most instances, and for this reason we are at times astonished to find, that a stomach, noted delicate by its possessor, should be able to discuss a beef steak with great ease, while tea and toast, or bread and milk, seemed to be past its comprehension.

Here, then, we have supposed two cases, where indigestion is experienced, though the food be wholesome, and the stomach sound, merely because the diet and the natural or acquired powers of the digestive organs, are not congruous. In one case, the stomach is exhausted before the food is sufficiently changed; in the other, the food is changed before the stomach is duly exercised, or most likely, in some cases, quickness and intensity of the action are not so healthful as the slow and continued exertion. If this be borne in mind, not only will many capricious occurrences be explained, but an important prophylactical principle will be laid down.

When indigestion is established, we have a state that does not fall under the present consideration, and a dissertation on the qualities of food would be equally out of place here.

It is proper to observe, that by eating too much at one time, we distend and weaken the fibres of the stomach; while by eating too fast, we take them by surprise, and too suddenly

change their state; nor is want of proper mastication to be passed unnoticed, since, by such omission, we dispense with the preliminary parts of digestion.

I have dwelt the longer on the principles of the prophylaxis of the skin and mucous membranes, because, together, they form the whole surface that is exposed to the action of externals. When the body is treated of, as consisting of so many distinct organs, we lose that especial view, which is of so much importance, and consists of the sympathy of one part of the same tissue, with the others. In this case, the reason of sympathetic affections is not so apparent, as when we keep in mind that the organs are united by a pervading tissue, only modified in each, and not wholly changed in nature. The great determinations from one to another organ, are only to be understood by considering the parts common to each, and not by thinking of them as distinct in disease as they are in function.

[TO BE CONTINUED.]

ARTICLE III.

Practical and Pathological Observations on PALPITATION, and some other SPASMODIC DISEASES.

BY JAMES M'C CABE, M. D., CHELTENHAM.

Mens agitat molem, et toto se corpore miscet.—*Virgil.*

THERE are few diseases involved in so much obscurity as those which are usually called spasmodic, or of which the treatment is so unsettled and the pathology uncertain. Like Cullen's directions for bleeding in fevers, which were so hedged round with cautions and exceptions, that a follower of his doctrines must ever be at a loss when, and in what cases, to have recourse to the lancet. So in spasmodic diseases, between the apprehension of debility on the one hand, and of inflammation on the other, the practitioner is often held in suspense whether to adopt a tonic and anti-spasmodic, or an anti-phlogistic, method of treatment.

Cramp, which may be considered a familiar illustration of spasm, is known to almost every one. The suddennes of its attack; its independence of the will; the violence of the pain attending it; the gradual relaxation of the muscle or muscles which had been the seat of it; and the general soreness and debility of the part for some time afterwards. In every investigation, it is best to proceed from that which is best known, or most familiar, to that which is less known or involved in greater obscurity; I shall therefore examine a little into the conditions and circumstances attending cramp, before entering on the consideration of spasm of the vital organs.

The great violence with which a muscle contracts during spasm, is well exemplified by cramp of the leg, during which the bellies of the gastrocnemii muscles become as hard as boards. So violent is this contraction in some instances of cramp, that the individual who is the subject of it feels confident, that were the cramp to continue long, the muscles must give way and be torn. Cramp in any of the less powerful muscles of the extremities, is attended with less violent effects, and hence we may conclude that the danger which attends spasm in any part or organ, is in the direct ratio of the muscularity and vitality of the part or organ affected. This brings us to the heart, which is at once the most muscular and most vital of the organs; and a spasm of which is undoubtedly attended with the greatest danger.

The immediate cause of cramp of the extremities would appear to be the sudden and violent action of a muscle. I have said that cramp is independent of the will; by which I mean that the will cannot determine or limit its duration. I believe also that cramp seldom takes place when the actions of muscles have been previously determined by the will; that is, when by a previous determination of the mind, and preparation of the body, for any particular action, the muscles have been duly prepared for exertion. The sudden plunging of a horse, by calling unexpectedly into action some particular muscles of the rider, may occasion a cramp of those muscles; and from the same cause, suddenly starting out of bed, or indulging in a lazy yawning stretch, to rouse the dormant faculties of a morning, has been known to occasion cramp. The cramp occasionally caused by swimming, would appear at first view to militate against the opinion that the will possesses a controlling power, as cramp may occur although the mind has willed the act. We must consider, however, that in the act of swimming, the muscles, from a state of comparative rest, are thrown into a state of violent action, without any preparatory tension.

The conditions, then, that would appear necessary to the production of cramp of the extremities, are two; a previous state of muscular inaction, followed by sudden muscular contraction. From this we may conclude, that during periods of bodily repose or inaction, an accumulation of nervous energy takes place in the system; and that it is the superabundance of this nervous energy or power, directed to muscles called suddenly into action, that is the immediate cause of cramp.

In applying these views to the elucidation of spasmodic affections of the heart, we are led by analogy to conclude that such affections may exist independently of any causes of obstruction in the circulating system. This view of their causes would render our prognosis more favourable, by holding out a greater chance of cure or recovery, than that which refers the cause to ossific depositions in some of the great vessels about the heart. I have before me notes of the case of a lady who has been long

subject to violent spasmodic palpitation of the heart. The attacks are usually ushered in by derangement of the function of digestion, attended with symptoms and feelings usually designated bilious. A violent contraction of the heart then suddenly took place, which the patient described as if the heart were compressed in a vice, which prevented its dilatation. The spasm gradually relaxing, the heart resumed its action, but with an altered rhythm and movement. The action which now took place I can only compare to the most agitated fluttering of a bird; the systole and diastole were lost in the general flutter, and the limits of the space traversed by the heart in its general movement, appeared to be much enlarged. The pulse at the wrist partook of the same fluttering motion, and defied every attempt to calculate the rate of its pulsation. The duration of the attacks was very variable. From a few minutes to several hours; on one occasion, which was the worst she had ever experienced, she continued in this state for thirty hours. The cessation of the attack was as sudden and as violent as its commencement; the heart again violently contracted; the breathing became suspended; the circulation seemed for an instant to be arrested; and the countenance became sharp and livid. The diastole at length took place, the heart resumed its action, which, as well as the pulse at the wrist, was again found to be natural. The spasm which took place at the termination of the attack, appeared always to be attended with greater danger than that which occurred at the commencement, owing, no doubt, to the exhausted state of the patient; and at the termination of the attack to which I before alluded, which had lasted thirty hours, the spasm was near proving fatal.

This severe attack occurred in the country, at a considerable distance from Cheltenham, (near Blockley, Evesham,) and the medical practitioner in attendance having given an opinion that he entertained scarcely any hopes of her recovery, I was summoned to see the patient, having before attended her in similar attacks. On my arrival, I found that the attack had then lasted twenty-seven hours, and that the patient appeared nearly exhausted. Owing to the extraordinary action of the heart and state of the pulse, the medical attendant, who was a very intelligent practitioner, had given his opinion that there was an ossification of some of the large vessels of the heart, which caused him to consider the case hopeless. Had I not before attended the patient and witnessed her attacks, I should probably have entertained the same opinion, and given the same desponding prognosis; but my experience of their usual progress induced me to refer the cause to spasm, rather than to irremediable organic disease; and although this was the worst attack she had ever experienced, I still gave hopes of her recovery. As her attacks were usually preceded or accompanied by symptoms of abdominal congestion and functional derangement of the stomach, I directed a strong senna mixture, with a few drops of laudanum

in each dose. This was given in small doses, frequently repeated, lest larger ones might disorder the stomach. In the intervals of the doses, chicken broth was given, to support the patient. In less than four hours from the commencement of this plan, the bowels having been freely and copiously evacuated, the spasm ceased, in the way I have already described. It is now five years since this attack, and although she has since, from time to time, experienced slight attacks, by attention to regimen, and taking occasionally aperient medicine, she still enjoys tolerable health.

Between cramp of the extremities, and spasm of the heart, the analogy of course is not perfect; the heart being an involuntary muscle, while the muscles of the extremities are ordinarily subject to the will. We shall find, however, that the same causes have a tendency to produce both affections. We have seen, from what has been already stated, that inactivity and indolence are predisposing causes of cramp; we shall find that spasmodic palpitation most frequently occurs in those who lead a sedentary life. During a state of inaction, the circulation of the blood is carried on by the heart and arteries, perhaps somewhat assisted by the atmospheric pressure to which we are at all times subjected; while taking exercise, the circulation is promoted and assisted by muscular contraction, particularly in those parts most remote from the centre of the circulating system. The increased atmospheric pressure occasioned by the motion accompanying exercise, will also assist in propelling the blood in its course towards the heart. It is probably this increased atmospheric pressure which renders the exercise of riding on horseback so peculiarly healthful. It is of common observation that when the mercury stands low in the barometer, the spirits of invalids are low also, and that they often rise as the mercury rises. These effects we must ascribe to the difference of atmospheric pressure; and as the motion accompanying exercise on horseback causes the atmosphere to press with an increased impulse on the surface of the body, it is probably to this increased atmospheric pressure, that the exhilirating effects of horse exercise ought chiefly to be attributed.

In the treatment, then, of spasmodic palpitation, and indeed in all spasmodic and nervous disorders, exercise, particularly on horseback, if the case will admit of it, ought invariably to be enjoined. If exercise on horseback cannot be taken, walking exercise may be substituted, and where the strength will not admit of either, carriage exercise should be recommended. Exercise in an open carriage has all the advantage of riding on horseback, so far as regards atmospheric pressure; but the impulse of cold air on the surface of the body, without being counterbalanced by the re-action of more active exercise, may impel the blood on the internal organs, and occasion visceral congestion or inflammation. In cold weather, therefore, and in delicate constitutions, such exposure should be avoided, and exercise, under such circumstances, will be best taken in a close

carriage. I have found that patients subject to palpitation, have been unwilling, in the first instance, to try exercise as a remedy, as they were impressed with the idea that they were unequal to the exertion. On making trial, however, they soon found that during the periods of taking exercise, the palpitation ceased in a great measure, or at least ceased to be to themselves, what it had been before—an object of undivided attention, and their experience of its good effects was afterwards sufficient to ensure adherence to a plan of treatment from which they derived so much benefit.

In some cases of spasmodic palpitation, the spasm extends to the muscles of respiration. In these cases the danger appears even more imminent than where the spasm is confined to the heart. Some time ago, I was called suddenly to a gentleman whom the messenger reported as having been seized with a fit. I found the patient, (a young man,) sitting in a chair, supported by the attendants. His mouth open; his lips livid, and his face covered with a cold perspiration. The attendants had very properly removed his cravat, opened his waistcoat, and thrown up the windows of the apartment. The action of the heart had nearly ceased, an indistinct flutter only could be felt, on applying the hand over it. The pulse at the wrist was imperceptible, and he had ceased to make any effort at inspiration; consciousness still remained, and he stared wildly about him. I attempted to rouse him, by desiring him to try to draw in his breath, performing myself, forcibly, at the same time, the action which I recommended; as if roused, and informed, by an imitative impulse, he tried, and succeeded, and by the aid of stimulants, quickly recovered. On enquiry, I found that he had only just arrived from Stroud, when he was suddenly taken ill; that he was subject to spasms, particularly after exposure to cold, which had been the case that morning. His complexion was dark and sallow, and with a delicate habit of body, there appeared to be combined what is considered a bilious and nervous temperament.

Those persons who are subject to bilious attacks, and are of what is usually called a bilious habit of body, will be found, I think, most liable to spasmodic diseases. A knowledge of this fact is of some practical importance in the treatment of spasmodic palpitation, as it points out the necessity of giving, during the paroxysm, such aperient medicines as are calculated to remove bilious accumulations, and to improve the biliary secretion. Mercurial and aloetic purgatives, assisted by senna and salts, or by a saline mineral water, where convenient, will generally answer the purpose; we must remember, however, that a spasm of the biliary ducts, or of some part of the intestinal tube, may defeat our object, and render the most powerful medicines inefficient. In such cases, we must have recourse to opium and the warm bath, which are to be alternated with the aperient medicines, and persevered in till the object shall be accomplished. Light bitters and anti-spasmodics may be given during the periods of convalescence.

I had written thus far, when I received the monthly fasciculus of the Medico-Chirurgical Review for September, 1829, in which I find extracts from a paper by Dr. Macfarlane, published in the Glasgow Medical Gazette, (I believe,) of May, 1829, on the subject of "cramp or spasm of the stomach." These extracts contain some interesting cases, and one or two dissections, accompanied with some judicious observations by Dr. Macfarlane, and the Editor of the Review. Ether and laudanum were the medicines on which Dr. Macfarlane appears to have placed his chief reliance, and the Editor observes, on the subject of treatment, "that when the existence of spasm is once ascertained, the stimulants should not be sparingly administered." It is singular that neither of them recommends the use of aperient medicines, nor do any aperient medicines appear to have been precribed by Dr. Macfarlane in any of the cases given in the extract, although the following judicious remark occurs in his paper. "The complaint in dyspeptic subjects is generally called forth by eating cold or indigestible substances." For the reasons already mentioned in this paper, I have given aperient medicines in other spasmodic diseases, and I have followed the same practice in spasm of the stomach.

A short time since I was called to a respectable tradesman of this town, a house-painter, glazier, &c. I found him writhing under the agony of spasm of the stomach; his face covered with a cold perspiration, and his countenance expressive of intense suffering and great anxiety. He is a large corpulent man, probably about 45 years of age. He told me that he was subject to such attacks, but had never before felt himself so ill, or thought himself in so much danger. I wished him to go to bed, that fomentations might be applied to the stomach, but he assured me that such was the agony he suffered, that to lie down or keep still was impossible for him, and he kept in constant motion on the sofa on which he was sitting, his body curved by the violence of the spasm. I ordered a strong aperient mixture of peppermint water, salts, and tincture of senna, to which was added a drachm of laudanum, and so dangerously ill did he appear to be, that I thought it right to stay till the medicine was brought, that in the event of its being rejected by the stomach, some other form of medicine might be tried. In the mean time, fomentations were applied to the stomach. When the medicine was brought, I gave him a wine glassful of it, which I repeated in five minutes, and again in ten minutes; another bottle was sent for of the same quality and strength, which I directed to be continued in the same way, or at such intervals as the stomach would bear. I left him, still in the greatest agony, promising to return in about an hour. On my return I found him better. The spasm had ceased, but not before he had taken nearly the whole of the medicine, and his bowels had been freely evacuated.

The relation that subsists between biliary and spasmodic diseases, has not been, I believe, much inquired into. Whether

it be the relation of cause and effect, the one producing the other, and if so, to which class of diseases precedence should be given, in the chain of causation; or whether both may not depend on one primary cause, a morbid irritability of the muscular fibre in all the muscular tissues, occasioning contractions in the muscular coats of the gall ducts, as well as in the more vital organs. Whatever may be the nature of this relation, the coincidence at least appears to have attracted attention. Dr. Gregory makes mention of a communication by Dr. Latham, to the college of physicians, describing two cases of enlarged liver, in which all the genuine symptoms of angina pectoris were observed. Both patients died suddenly.

This disease, which has been called angina pectoris by some writers, and syncope anginosa by others, consists essentially in an excruciating pain in the region of the heart, which comes on suddenly, sometimes from mental emotion, and sometimes from bodily exertion; and generally accompanied with an alarming faintness. A great deal has been written on this disease by able and enlightened physicians, and still the pathology and treatment of it are involved in doubt and difficulty. The train of symptoms which constitute angina pectoris, have been attributed by some to ossification of the coronary arteries of the heart, and by others to ossific depositions on the semilunar valves. Dissection, however, has detected both these morbid states in cases where the disease had not existed during life, showing that ossification does not necessarily produce the disease; and on the other hand, the disease has existed and proved fatal, where post mortem examination could not detect ossification or ossific deposition. From these circumstances, I am inclined to consider the disease spasmodic. That ossific points deposited on the valves might irritate or vellicate the fibres of the heart, when brought violently and perhaps angularly into contact with them by sudden exertion or mental emotion, is easily conceivable; in such cases, it might be considered a spasm of the heart immediately produced by local irritation, rather than arising from a permanent obstruction to the circulation.

Dissection does not always explain the cause of those irregularities of the pulse which we sometimes meet with in individuals. A gentleman, now no more, who possessed a highly cultivated mind, and who himself took an interest in all subjects of science, told me that as long as he could remember, he had an intermitting pulse. That many medical men of the greatest eminence in the profession had felt it, and that most of them thought it must depend on some organic affection of the heart. During the last few years of his life, circumstances occasioned my being much in his society, and I often examined the state of his pulse. He himself aptly enough compared it to long and short notes in music. A few beats in rapid succession, were followed by a lengthened pause, after which the beat became natural. These changes took place at uncertain intervals, but without any appa-

rent cause. He often expressed a wish that in his case a post-mortem examination should take place. Early in life he had suffered from pulmonary disease, to occasional attacks of which he was ever after subject. He died near the age of seventy, of hydrothorax, accompanied with complete physical exhaustion. In his last illness, beside myself, he had the benefit of the attendance of one of the able conductors of the Midland Medical Journal. By us, assisted by another medical gentleman, the post-mortem examination was conducted. We found, as might have been expected, the physical effects of much thoracic disease; but unless some specks of ossific deposition on the semilunar valves, we found nothing to account for the intermission of the pulse, which would appear to have been constitutional.

Among the causes of spasmodic diseases may be reckoned the moral emotions. Such emotions are known also to have great influence over the functions of the stomach and chylopoietic organs. The receipt of unwelcome news will fur the tongue and destroy the appetite; will alter the heart's action, and suspend or deteriorate the nervous influence on which organic action depends. Such impressions frequently made on the system, may ultimately destroy health; the inroads made upon which will be marked by an increasing susceptibility to such impressions, constituting with reference to the digestive function, what Dr. Johnson has called a "morbid sensibility of the stomach," but which, in its mental aspect, might also be called a morbid sensibility of the mind. Speculation on the stock exchange, and other pursuits which agitate the mind, without allowing time for sufficient exercise, or which do not allow of mental relaxation, have a tendency to induce this nervous state. The absence of all pursuits of interest may produce the same effect, and the stagnant mind and inactive body may mutually destroy each other's health. In all these various states, air, exercise, and employment, constitute an essential part of the cure.

I had finished what I intended to have written on the subject of palpitation and spasmodic diseases, and had forwarded the manuscript to the editors of the Midland Medical Journal, when my attention was directed to the paper of Dr. Darwall, of Birmingham, published in the fourth number of that Journal, "On spinal and cerebral irritation." The cases given by Dr. Darwall in his excellent paper, are so nearly allied to the class of diseases to which my paper refers, that I do not wish my observations to appear without some reference to his paper.

Most of the cases given by Dr. Darwall, are cases of hysteria, with its ever varying shades and usual accompaniments of dyspepsia, anorexia, palpitation, spasms, &c. and supposing these symptoms to arise from a diseased state or condition of the cervical portion of the medulla spinalis, he recommends the application of blisters to that portion of the spine. It is admitted that post-mortem examinations have not detected much apparent alteration in the structure or condition of the medulla spinalis in such

cases, and in consequence the vague designation of "irritation" has been given by pathologists to the supposed morbid condition. Irritation, after all, cannot be considered a morbid condition of a part, it can only be an effect of something producing it in the living body; and in looking for causes, we must still ascend higher. Whatever conceivable condition, however, of the medulla spinalis may be considered the cause, as such condition or state must be permanent, so should the symptoms arising from it; but spasmodic diseases are in their nature temporary or occasional, and cannot well be supposed to arise from a permanently existing cause, I am inclined, therefore, to conclude, that although the heart is supplied with nerves from the cervical part of the medulla spinalis, the spasmodic affection of that organ which we call palpitation, arises rather from temporary and transient causes, than from any permanently existing morbid state, at the source or origin of its nerves.

Whatever we may think of the theory, however, I have no doubt but that the practice recommended by Dr. Darwall, will be found highly useful; and that the application of blisters to the spine or back, in cases of palpitation, will assist in quieting the action of the heart; whether this effect arises from counter-irritation near the origin of its nerves, or from the general impression which a blister makes on the nervous system; or whether the effect is produced by taking off the attention of the patient from the action of the heart, and centering it for the time in the action of the blister.

I find, that although Dr. Darwall has not noticed the co-existence of the nervous and bilious temperaments, he has not neglected the use of aperient and stomachic medicines in the treatment of his cases. "Frustra fit per plura quod fit per pauciora," may be a good general rule in philosophy, but in medicine, I think, the desire to simplify remedies, ought not to induce us to omit the use of any remedy that has the recommendation of practice in its favour. In the treatment, therefore, of spasmodic diseases, I think the application of blisters, as recommended by Dr. Darwall, may be advantageously combined with the practice which is here recommended.

ARTICLE IV.

A Biographical Sketch of the late Dr. Thomas Christie, of Cheltenham.

BY MR. C. FOWLER,

Surgeon to the Cheltenham Casualty Hospital.

Vita enim mortuorum in memoriâ vivorum est posita.—*Cicero.*

Next to those who have enlarged the boundaries of professional knowledge by the introduction of new principles, are the individuals who have given them a scientific application, and rendered them honestly subservient to their own fame: and we presume that every medical man who regulates his practice by these and the like views, deserves at his death to have his name recorded, and his memory transmitted, in return, for that degree of respectability which his upright conduct has bequeathed to the professional character.

Thus do we venture to preface the life of a physician whose integrity in his professional transactions, has not only procured for him public esteem, but what may be regarded as a still stronger testimony of his merits, *professional* respect. He has lived and he has died, respected and regretted by all those of his brother practitioners who have honesty enough to disclaim the base arts of charlatanism and deceit, and to adopt, in lieu of them, the more open, manly, and dignified means of arriving at professional prosperity.

Doctor Thomas Christie, the third son of the Rev. John and Susan Harvie Christie, was born at Camwath, in Lanarkshire, the 2nd of April, 1774. His father, who was the clergyman of the parish, he had the misfortune to lose when he was only four years of age; as early as his eighth year, he was sent by his friends to the Grammar School, of Glasgow, from whence, at the expiration of four years, he was removed to the University in the same town, and remained there till he had completed that general education which is preparatory to the acquirement of professional knowledge. After having passed through what are termed the gown classes, he was sent, at the age of sixteen, to Edinburgh, to commence those studies that were ultimately to qualify him as a surgeon; for at this period of his life, he appears to have had no intention of taking a degree. During his stay at this University, he became the member of a medical debating society, and was thrown into contact with men who have since become eminent for their talents. Testimonials are not wanting in proof of extreme diligence in the prosecution of his studies; and even had they failed us, we might have established his claim to them from a knowledge of his character. At the expiration of his

time, he passed the College of Surgeons, and proceeded to London, where he entered at St. Thomas' Hospital, and became a dresser under the late Mr. Chandler, and thus completed his surgical studies by something like an introduction into the practical duties of his profession.

In 1793, he obtained his diploma from the London Royal College of Surgeons, and was appointed, through the interest of Sir Walter Farquhar, (the patron of his youth, and the friend of his after life,) a surgeon to the old 80th Regiment, which was raised by a letter of service to the present Marquis of Anglesey, then Lord Paget. The depot for recruits was stationed at Chatham, and in December, of the same year, we find him joining his regiment previous to its employment upon a foreign service. In the following year, 1794, he embarked for the first time for the continent, and accompanied his regiment to Flushing; here he remained for some time exposed to the malaria, which afterwards committed such dreadful havoc amongst the troops employed upon the Walcheren expedition. His regiment, after this, received an order to join the strength of the Duke of York's Army, and at Nimeguen the blood of his regiment was first drawn, and himself engaged, for the first time, in the operation of amputation.

A capital operation is to the young surgeon, what the first battle is to a victorious general, or the first brief to a barrister; it is, if we may venture on the expression, a practical certificate of his abilities, and if well and successfully performed, is, in his own case, an actual release to the Court of Examiners from their "*sponsorial*" capacity. The Doctor, however, had other dangers to encounter than what usually befal the ordinary surgeon in the operating theatre of an unbesieged town; the place was briskly bombarded by the enemy, and the tower of the church in which he was operating, became a mark for the French shot; to perform an operation under such circumstances, is not only a proof of some skill, but a manifestation, also, of some personal courage.

After the evacuation of Nimeguen by the English, he accompanied the army in its retreat, and arrived in England in May, 1795; his stay here was but of short duration, for a few months after he was summoned to attend his regiment, which, with three others, under the command of General Doyle, were sent to Quiberon and Isle Dieu, in support of the royalists in La Vendée. This expedition remained stationed at Isle Dieu for two months, and whilst there, kept up a constant intercourse with the royalist party, occasionally receiving their deputations, and supplying them with arms: many emigrants of distinction fled to the place for protection; and the Count D'Artois, the present King of France, having no table of his own, constantly dined with the general and his officers.

The time was now to arrive when the Doctor's regiment had more important duties to perform than that of moving hastily

from one point to another, without a chance afforded it of reaping a share in the glory of the contest. An order was issued for the evacuation of Isle Dieu; the troops returned to England; and the 80th, after receiving its complement of men, prepared to leave its native shores for the last time, and seek its fame by a hard and unhealthy service on the Asiatic Continent.

In April, 1796, he set sail for the Cape of Good Hope, where the regiment was stationed for the space of four months, and signalized itself by co-operating with Admiral Sir George Keith, in the capture of a Dutch Squadron, consisting of seven ships of war, and a large reinforcement of troops for Batavia and other Dutch settlements in the East Indies. It might reasonably have been expected that the Doctor's regiment would have shared in the prize money, in common with the rest, but owing to some decision at head quarters, which it would be presumption in us to investigate, the whole was awarded to the navy. After this exploit, which reflected some degree of reputation upon the persons who had so ably concerted and achieved it, the Doctor left the Cape, and proceeded with his regiment to India.

In February, 1797, they arrived in the Madras Roads, and disembarking, encamped on the Esplanade: an order, however, very shortly arrived for transporting them to Trincomalee, in the Island of Ceylon; and here, after a residence of four years, exposed to a tropical sun, and the baneful influence of miasmata; where the activity of the recruiting officer could scarce keep pace with the havoc of disease; the old 80th re-commenced its career under the auspices of Colonel Wellesley, now the illustrious Duke of Wellington. With him we shall leave them to seek their laurels, reserving only for the subject of our memoir, the companion of their earlier days; one who had shared with them their successes and misfortunes, and directed with anxiety his time and his attention, to the cure or alleviation of their complaints.

During a residence of thirteen years in the Island of Ceylon, the Doctor was successively appointed to posts of considerable trust and importance. In consequence of the satisfaction he had given in his medical capacity, he was, in the first place, made garrison surgeon of Trincomalee, in which situation he continued till the death of Dr. Ewart, in 1800, when his Excellency the Honourable Frederick North, governor, appointed him senior medical officer and superintendent of the civil and military hospitals, with a salary of £1200 a year. This promotion was graciously approved of by his Majesty, as appeared afterwards in an official dispatch of Lord Hobart. Major-General M'c Dowall, Commander-in-Chief in India, had also facilitated the ratification of this appointment, by his high encomiums of him in his dispatches to the Duke of York: and the following extract of a letter from his Royal Highness to the Major, will show how far his recommendation was approved.

"I cannot conclude this letter, without noticing the general medical report, drawn up by Mr. Christie, surgeon to the 80th regiment, which was transmitted in your letter of the 1st of September, of which, in point of clearness and form, I cannot too highly approve; I have received with much pleasure the favourable report which you make of that gentleman's zeal, activity, and intelligence, and I shall not be unmindful of your recommendation of him, and that of the other officers mentioned in your letter.

"I am, Sir, your's,
"(Signed) FREDERICK."
"Horse Guards, 2nd May, 1804."
"To Major-General M'c Dowall, Commander-in-Chief."

It is not from the commendations or recommendations of high official characters, however, that we are always to draw inferences of the real merit of the persons they patronize; in general, the objects of their praise or support, are too far removed from their immediate observation; and the recommendation, though powerfully backed, may be polluted at its source, by a motive of interest or obligation; the praise of great men is undoubtedly flattering, but "*laudari a laudato viro*," to meet with praise from a man, who, from similar professional pursuits, has both the power to discriminate and the candour to acknowledge our deserts; such commendation, we say, is the more gratifying, as it is the less suspicious. After premising thus much, we feel in some measure, called upon to subjoin the following quotation from a letter of Dr. Ewart's, Inspector General and Physician to the Forces.

"Sir,—I have before had occasion to particularize your exemplary conduct in my general reports to this Government, as well as to the Commander-in-Chief in India, and it affords me most unfeigned pleasure, to have it again in my power to repeat my commendations. Your cases are drawn with precision and discrimination; your daily reports evince a constant attention to each particular symptom, on the accurate and nice observations of which, a rational practice can alone be founded, and your treatment in general, appears to me judicious and decisive.

"(Signed,) EWART,
"Inspector General."

We believe the medical police of the Island, had never been so effectually regulated, as when the Doctor was placed at the head of its establishments; regular and faithful minutes were taken of each class of disease admitted into the various hospitals; and from these, a general and periodical report was drawn up by him, and transmitted to the heads of government. The mortality amongst the European and Native troops, had been so great, as to excite just grounds for alarm; a regiment of Madras Native Infantry had lost one half of its men by the ravages of a single disease, and some English regiments had been more than decimated by attacks of the same nature. To investigate the

causes of this complaint; to find the best method of treatment, and the most effectual means of prevention in future, were all of them points to which the Doctor most anxiously directed his attention, and not without the result of comparative success. The disease in question, of which we are about to give a brief sketch, has usually been denominated beriberi; but whether this name was given to it by the old Dutch settlers on the island, or the inhabitants themselves, we are at a loss to ascertain. Considerable obscurity seems also to prevail in the accounts given of it by various writers; and their contradictory reports would lead to an idea that they were either treating of different diseases, or else had not been sufficiently attentive to the progress and developement of its symptoms. As the Doctor may safely be admitted as an authority on this subject, we shall quote his description of it, and refer our readers for further particulars, to his correspondence on the nature of the disease, published at Calcutta, in the Appendix of a valuable work on the diseases of Indian Seamen, by William Hunter, Esq.

"The symptoms of beriberi are, a difficulty of breathing, preceded by, and attended with, a numbness and paralysis of the lower extremities, accompanied most commonly with œdema and other dropsical symptoms, which are rapid in their progress; and frequently conjoined with great anxiety, palpitation, vomiting and spasms. The symptoms to be laid most stress upon, as accounting for the rapid progress of the disease and sudden death, are the spasms of the muscles of the chest, heart, and large vessels; and from the dyspnœa being the most common and important symptom, I am inclined to designate the disease 'asthma hydropicum.' The causes predisposing to this complaint, are a want of stimulating and nourishing diet; exposure to moisture or impure air; despondency, uncleanliness, and any thing else of a debilitating nature."

Bontius, a Dutch physician, was the first who published an account of this disease, but it is difficult to identify his description of it with the one we have just given, and it is only from similar views in the mode of treatment that induce us to think he must have intended the same.

Sauvages also mentions the beriberia indica, which he classes under his "spasmi universales clonici;" this short account of it runs thus. "*Beriberia Indica genus est morbi spasmodii, ideo beriberii seu* OVIS *dicti, quia ægri genubus retractis elevando crura tanquam oves progrediuntur. Cognoscitur ex motu tremulo manuum, pedum, et quandoque totius corporis, simulque stupore quodam dolorifico harumce partium, cum tactûs obscuratione aut hebitudine; dolor verò est similis formicationi quam apud Europæos frigus in digitis excitat. His adde vocis exilitatem et raucitatem, ut vix prope assidentes ægrum loquentem intelligant; accedit non rarò pectoris musculorum crampus, qui anhelitum, ac vocem intercludit.*

"*Hic affectus lethalis non est, sed chronicus et curatu difficilis; principium pro catarcticum est frigus susceptum calente corpore; si pectus adoriatur, lethum non rarò infert.*"

In this short description, it will be observed that Sauvages has omitted mentioning the dyspnœa and dropsical symptoms on which the Doctor mainly insists; symptoms so invariable in their appearance, as to induce him to found the definition of the disease upon them. It is stated, too, that the disorder is not fatal, or at least, its fatality is limited to its attacks upon the chest; unfortunately, however, this limitation has proved too frequently the termination of the complaint. From all this we may reasonably infer, that the author has been led into error, or that writers are not agreed in the identity of the disease; indeed, upon a reference to another part of Sauvages' book, we find a disease more closely corresponding with the one described by Doctor Christie, than any other; it may be found under the name of Anasarca Americana, and is synonymous with the Mal d'Estomac of the French, and the Cachexia Africana, and dirt-eating of some English writers. We have not time, however, to enter upon any further discussion of this subject, but shall refer any of our readers who may think it worth their while to trace the similarity of the two diseases, to an excellent communication of Dr. Davidson, in the American Medical Repository, entitled, Cachexia Africana. The beriberi of our author, as it existed in the island of Ceylon, was soon mitigated by a more judicious and scientific treatment, and the frequency of its occurrence lessened by the regular supply of a more nourishing and stimulating diet.

The Doctor had now to direct his attention to the subjugation of another disorder, which, in its consequences, was even more distressing than the first. The small pox was committing its ravages in all parts of the island, and the natives were continually falling self-devoted victims, because they looked upon all the means of relief as a blameable interference with the visitations of their Gods. So strong was the influence of superstition, that they suffered the best feelings of nature to become a sacrifice to it; and the wife, the child, the parent, and the husband, during the attacks of this pestilential disorder, were left an unprotected and helpless prey to the wild beasts of their forests. In proof that we have not overcharged this picture, we shall insert a passage from the Doctor's own book upon the "Introduction of Vaccination into the Island of Ceylon;" it is, however, a quotation from the Rev. Mr. Cordiner's History of the Island, a work in which Doctor Christie's name is occasionally referred to, and to which he was himself a contributor.

"On the 4th of September, I accompanied the Superintendent of Hospitals, in a boat, ten miles up the arm of the sea, which beautifies this part of the country. His object was to inspect the villages of Vandermal and Erraor, which had lately been deserted by the inhabitants, owing to the breaking out of the small pox. On such occasions, the husband forsakes his wife,

the mother her children, and the son his father, often leaving them in their miserable huts to the ravages of famine, and wild beasts of the forest. Sometimes, however, they contrive to furnish them with subsistence, without entering their dwellings, but in those sequestered hamlets, medical aid was only now beginning to be known.

"After the inhabitants had left their villages, they became the prey of wild elephants, hogs, and panthers. The elephants broke down the feeble fences, took possession of the gardens, tore up the plantain trees by the roots, levelled those of the cocoa nut, and browsed on the leaves. The ravaged orchards exhibited scenes of terrible devastation, the mangled trees were strewed on the ground, the straw stripped from the roofs of the cottages, the surface of the earth broken up and filled with hollows, the fences shattered, earthen pots, the simple utensils for culinary purposes, wheels, reels, looms, and all the apparatus of the weaver, lying useless and forsaken. A family of three infected persons, who had been left in one of the gardens of Erraor, were supposed to have been devoured by the chetas or wild bears, as a vestige of them could not be seen. Of the diseased in Vandermal, forty people died, and ten recovered. The malady having then subsided, the villagers were beginning to return, and setting about repairing their demolished hamlets."

Such distresses as these were calculated to attract attention; and accordingly, the Hon. Frederick North established small pox hospitals for the reception of patients labouring under the disease, the care and regulation of which were ultimately committed to the surveillance of the Doctor. Much comparative good was of course effected by these means, but about the same time, Jenner's immortal discovery of the prevention of small pox by vaccination, was introduced into Europe; the discoverer had also made several unsuccessful attempts to transmit the virus in a state fit for vaccination into the different countries of the East. His laudable design, however, was for a time procrastinated, till at length Dr. Short succeeded in producing the disease at Bagdad; from this place it found its way to Bussorah, and ultimately to Bombay. It was not, however, till after thirty or forty trials by various methods and different surgeons, that the disease was produced; and Anne Dasthill had the honour of first affording the pustule from which matter was propagated, and life distributed to millions of her fellow creatures.

No sooner had vaccination succeeded on the continent of India, than measures were adopted for its introduction into the island of Ceylon, and a packet of matter was forwarded by Doctor Helenus Scott, to Trincomalee, under cover to Mr. North. Several trials were made of this, as in the former instance, before it eventually succeeded, which it did in the person of John Sybille, a half-cast boy, from whose arm others received the disease, and impregnated threads were sent to all parts of Ceylon.

The small pox hospitals were now of no farther use, and as soon as the patients already in them were discharged cured, the Doctor obtained and issued an order for their suppression. Since the introduction of the cow pox in 1802, nearly twenty thousand persons have been vaccinated annually; and the Doctor, in his official report for 1809, states, that 128,000 persons residing in the Island, had passed through the regular forms of the disease. The small pox was now no longer heard of in the form of a general and pestilential epidemic; its appearance was insulated and partial, attacking only an individual or two in its way, who had not been previously guarded by vaccination, and soon obstructed in its further progress by those who had; the priests, themselves, had been forced to confess the advantages of the measure, and, yielding for once their religious scruples, induced their followers to reap the benefit of a blessing calculated to afford them such a certain protection. Thus was a large and populous territory for ever freed from one of the most merciless of human scourges.

The hero who can kill a hydra, or cleanse the Augean stables from the accumulated filth of years, has no doubt performed something that is wonderful: but the man who, by his exertions, can lessen the aggregate state of wretchedness of a whole Island, does more, for he has effected what is useful.

In the year 1802, the Hon. Frederick North conferred another mark of his esteem on his friend, the Doctor, by promoting him to the office of Justice and Conservator of the Peace for the town and fort of Columbo. In the discharge of his magisterial duties, we can readily conceive him to have been quiet, unostentatious, and consistent; and perfectly opposed to those flippant characters which, when invested with a few emanations from the executive power, look upon themselves as the very images of royalty itself. A residence in an unhealthy climate, had taught the Doctor to anticipate those contingencies which may shorten life and affect the health, before a sufficient provision can be made for the supply of future wants. From a prudential consideration of this nature, he was induced to become a subscriber to the "Ceylon Civil Fund," from which, after the payment of a considerable yearly sum, he obtained, on his retirement, a handsome pension for life. Owing to some informality or oversight, it was feared he would have forfeited the benefit arising from his subscriptions, but the difficulty was afterwards adjusted by a representation of his case to the Viscount Castlereagh, who admitted the justness of his claims.

Up to this time, 1809, Doctor Christie had not thought it necessary to solicit for his diploma; but owing, perhaps, to the recommendations of his friends, he was at length induced to do so, and for this purpose, handsome testimonials of his qualifications and services were signed by Sir Walter Farquhar and Doctor Saunders, physicians in London; and Doctor James M'c Gregor, of the medical staff. These were sent to the Senatus Academicus, of the Mareschal College, Aberdeen, and being

approved of, his diploma was granted. To this was afterwards added, the more weighty and honourable distinction of Licentiate of the Royal London College of Physicians. We have now traced the Doctor through the early and more active scenes of his life. We have seen him exercising his professional duties with honour to himself, satisfaction to the government, and benefit to the Island at large; fatigues of mind and body, perhaps conjoined with the influence of climate, at length affected his health, and induced him to seek a change in his native country. In 1810, after a residence of thirteen years in Ceylon, he set sail for England, and in the following year, he commenced practice as a physician in the town of Cheltenham.

Doctor Christie established a respectable and lucrative practice in the town of Cheltenham, by the aid of those *legitimate* means that were best calculated to conciliate him with his brother practitioners, and place him beyond the reach of either their envy or reproach. During the course of nearly twenty years' practice, he had never been detected in any thing like what may be termed a "professional stratagem;" nothing extrinsic or imposing was assumed; no work of supererogation performed; nor any finesse or policy resorted to that might give him the advantage over his fellow competitor, or assist him in deluding the credulous and weak; on the contrary, he seems to have been guided by a principle too often lost sight of in the present day, which was, not to compromise the professional character by humiliating and degrading schemes for individual aggrandizement.

He was a man of urbane manners and unaffected speech, and in his professional conversations, never suffered a technical phraseology either to embarrass his meaning, or astonish his patient. His prognosis of disease was carefully formed and prudentially given; nor would the vanity of passing for a successful prophet induce him to hazard it too often. He was not of the number of those physicians of whom Seneca remarked, that they continually exaggerated the danger of a disease, in order to increase the merit of the cure. "*Multi quos auxerant morbos, majore gloriâ sanarent.*" To his patients he was kind and attentive, without being either harrassing or officious, nor did he descend to court their favour by overstrained and superfluous civilities; he never compromised the dignity of the physician, by assuming the fawning manners of the courtier, and distinguished between a parasitical behaviour to the patient, and an anxious attention to the disease. If the life of an individual was at stake, his solicitude might suggest to him the propriety of *two* visits a day, but never more, unless at the suggestion of the patient or his friends. Some practitioners, however, have adopted a different course, and so extremely eager are they in quest of popularity, that unsought, unasked, they have volunteered three, sometimes four, visits in the day. The public really owe a great deal to these indefatigable men, who run so fast and so often to meet the approaching disease. "*Venienti occurrite morbo.*"

O Medici! medici, quærenda pecunia primùm; Virtus post nummos.

The Doctor sought out none of those objects for gratuitous attendance who, in return for unrequited services, might be led to balance their debt of gratitude, in becoming the heralds of his praise.* Neither did his kindness and benevolence to the poor, arise out of that adulterated feeling which regards them as stepping-stones or passports to the favours of the rich.

Thus we have viewed this exemplary man in almost all his professional bearings; and in no one have we been able to detect him in a variation from right principle. But lest we should be regarded as unqualified eulogists, justice compels us to mention and discuss one trait in his professional character, which has been viewed in different lights both by the profession and the public. It has been suggested, that he too often accepted of his fee; this admits of two interpretations, it is possible that the patient may have experienced the inconvenience of such a practice; but what is the result to the domestic medical attendant, if the physician be too careless of his fees? Why, that the latter will supplant the former when they can both be obtained at the same price. We rest the Doctor's excuse, then, upon a feeling of "liberality" towards the general practitioner.

In making Cheltenham his place of fixed residence, we think it would not be difficult to divine, in part, the motive for his choice. East Indians are continually flocking to the place, and amongst these he would most likely meet with a companion of his trials, or a friend of his earlier days, some one who might retrace for him the fading remembrances of the past, and inform him of changes that had subsequently transpired. With these friends we have shared his hospitality; and have listened with an attentive and inquisitive ear to his unaffected narration of past events. At such times, imagination has drawn us off to Indian thickets and jungles, in pursuit of the elephant and tiger, and we have

* It must really be degrading to the feeling of a high-minded and honourable profession, to see the manner in which some of its members consent to a compromise of its dignity. Most of our readers have, ere now, disembarked from a Dover steam packet, and have witnessed the disgusting and importunate manner in which recommendations are enforced by lackeys of the different inns. In most of our watering places, the visitor is subjected to an almost similar attack, and if he has not resolutely and determinately made up his mind to the choice of his medical attendant, it is a hundred to one but he is shaken from his purposes, by the forcible recommendations of some busy and officious female in favour of her own "MAGNUS APOLLO." But a still more degrading conduct is that, where the wife is made a colleague in her husband's professional affairs; where she has been led to throw off the retiring character of her sex, and to assume in its place a less amiable and more obtrusive manner; we have blushed on seeing such a woman in crowded circles, anxiously seeking introductions to the "*nouvelles arrivées*," for the sole purpose of narrating with *affected* distress, the numerous and endless professional engagements of her husband.

started from our reveries as though from the spring of the rattle snake or cobra di capello. We have seen him in the different relations of domestic life, as a husband, a father, and a friend; and have found him as faithful in the discharge of his social, as of his professional duties. For many years he was one of the senior physicians of our casualty hospital, where the friend who has traced his life, received, in common with others, the benefit of his instructions. It is with pain we approach the limit of his career, but "*Jam morbus pectore condit, mors instat, et Deus dat finem laboribus.*"

As early as the year 1823, the Doctor first experienced some of the symptoms of the disease which subsequently terminated his life, and a slight alleviation was then obtained by a relaxation from his professional duties, and a journey to the continent. By degrees, however, the malady increased, and it became evident to himself, as well as to his professional friends, that he was labouring under a confirmed attack of angina pectoris. To a man of an anxious and desponding turn of mind, and to one who has any knowledge of the nature of the complaint, this is, of all others, perhaps, the most melancholy that can befal him, since he is led to expect no benefit from the use of medicines on the one hand, and is threatened with death in a variety of ways on the other; any sudden movement of body, any violent emotion of the mind, whether dependent on himself or those about him, may be the cause of much temporary aggravation of distress, if not of death itself. John Hunter, a man of an irritable temper, and afflicted with a similar complaint, used frequently to tell his friends that it was in the power of any rascally servant to cause his death, by merely exciting his wrath. The Doctor, too, from a similar apprehension of the consequences, was obliged to refrain from any sudden bodily exertion. With such dangers surrounding him, it is not to be wondered at that he should be apprehensive of a sudden death; and in two places in his will, he alludes to the probability of its occurrence, a presentiment* which was

* That men labouring under this disease, with such gloomy and inevitable prospects before them, should occasionally indulge themselves in speculations as to the probable time and manner of their death, is not much to be wondered at; but when these presentiments are changed into prophecies, and the event has fully verified the prediction, the mind no longer views it as a contingency, but as something beyond the common run of human events. Let those who have listened with astonishment to the extraordinary death of a Lyttelton, now turn their attention to the no less wonderful end of Dr. Woodville; we give it as it was detailed by Sir Astley Cooper and Dr. Newell, at a medical dinner in Cheltenham, where the discussion of Dr. Christie's case led to the recital of the anecdote.

The late Dr. Woodville died of a disease similar in most respects to Dr. Christie's. Mr. Coleman, the professor of the veterinary college, and the intimate friend of Dr. Woodville, was invited by the latter to play a game of chess with him, a recreation of which they were both passionately fond; they had

melancholy verified on Sunday morning, the 11th of October, 1829, when he was found lifeless at the foot of his bed.

For the following notes of the post mortem examination of Doctor Christie's disease, we are indebted to Mr. Wood, a gentleman who always possessed the principal share of the Doctor's professional confidence and esteem.

On opening the thorax, the lungs were found to be in a perfectly healthy state. The pericardium contained no more fluid than its usual serous production. The heart was enlarged, and presented, on the whole, an unhealthy appearance. Both auricles were much dilated, more especially the right, and their parietes were thinned. The left ventricle contained about two ounces of fluid blood. The valves, with the exception of the aortic, were healthy, but these had so much osseous deposition round their origin, as to form a protruding bony ring, with but a small aperture for the transmission of the blood. The coronary arteries were ossified at their commencement. The arch of the aorta was somewhat dilated and thinner than natural, and the abdominal viscera appeared healthy.

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scarcely commenced, when they were interrupted by the servant announcing to the Doctor that a tradesman was waiting to receive the amount of a bill, for the payment of which, the Doctor had directed him to call on that particular evening. Upon this announcement, Coleman rose, and said he would finish the game with the Doctor another day; "by no means, my dear Coleman," was the reply, "we shall never have the opportunity again, excuse me for a few minutes, and I'll return." After a short absence, the Doctor came back, and sitting down, said, "now I have nothing more to do than finish the game of chess with you, as by this time to-morrow, I shall be a dead man. They proceeded with the game, when they were again interrupted by the servant announcing a gentleman to speak with Dr. Woodville; he was shown into the room, when the Doctor requested him to be seated, and hoped he would excuse waiting till they had finished the game, which happened to continue rather long. At length, however, it was terminated. The Doctor then rising, and addressing the person in waiting, an assistant from the undertaker, said, "I beg your pardon, sir, for having kept you so long waiting, but I have sent for you to measure me for my coffin, and to make arrangements for my funeral, as I shall be dead by this time to-morrow," and he really died the next day. The friend to whom we are indebted for this, and who was one of the party alluded to, has observed, that being a dinner story, it ought to be taken "*cum grano salis.*" However, the main fact is indisputable.

ARTICLE V.

Observations on Ovarian Disease,

(Suggested by the perusal of a Paper upon the subject, by J. Darwall, M. D.)

BY JOHN INGLEBY,

Member of the Royal College of Surgeons; one of the Surgeons to the Birmingham Dispensary; Lecturer on Midwifery in the Birmingham School of Medicine and Surgery.

To the Editor of the Midland Medical and Surgical Reporter.

Sir,—In your number for November last, a communication appears from my friend, Dr. Darwall, on the subject of that form of encysted dropsy, (if dropsy it can be called,) in which the ovarium is the seat of disease. The chief object of the author is two-fold. His first position is to shew the non-inflammatory nature of the complaint in its early stage. This inference, abstractedly considered, is undoubtedly correct, but, as his exclusive deductions appear to me calculated to divert the practitioner's early efforts from arresting the progress of the disease, and to discourage him from tapping under circumstances peculiarly demanding the operation, I have ventured to offer a few general remarks upon these important enquiries. To shew that the disease is not inflammatory at its onset, the Doctor relies partly upon the absence of pain, but mainly upon the allegation that when suppuration occurs, it succeeds tapping, and at the close of the complaint. Admitting the commonly passive nature of the disease at its onset, it cannot be denied that many persons have experienced on either side a dull pain, ab origine, by which they were enabled to determine the existence of a tumour, when its bulk did not exceed that of a pullet's egg. Such individuals have been especially sensible of this when moving in bed from one side to the other. To maintain that the disease is inflammatory, is far from my object. Presuming, however, that Dr. Parry's view will not be disputed, of local action being in certain parts sensibly increased, without any corresponding increase in the momentum of blood, as indicated by the pulse at the wrist, we may fairly argue upon the propriety of directing our practice accordingly. With this principle before us, it will not appear surprising that the disease has been cured by remedies of a local nature; and if I am not in error, Dr. Hamilton successfully treated seven cases by concussion and compression, whilst Mr. Abernethy speaks of having effected cures by repeated blisters, even in instances wherein tapping had been previously once performed.*

* It is difficult to suppose how fluid can be deposited either in hydrocele or in the ovarian sac, without a morbidly increased local action of the capillaries, a diminished absorption being in the explanation quite inadmissible. Perhaps,

When the symptoms, therefore, authorize a suspicion of the early existence of the disease, we should, in a favourable position, and when the bowels are empty, institute a very careful examination, for as in the incipient stage of pregnancy, so in the beginning of ovarian disease, the general distension rather occupies the alimentary canal than the uterus or its appendages. In a thin person, the examination may succeed beyond expectation, and after having accurately determined the nature of the complaint, we should establish a well directed local and general treatment, varied according to circumstances, as the habit of the patient is torpid or irritable.

The author's second object is to shew, that tapping is only useful when the volume of the tumour materially impedes respiration; to be had recourse to only in extreme cases; and that the more we trust to nature, and the less to art, the better will the patient fare. This opinion is founded on the three-fold circumstances of the disease having occasionally terminated in a spontaneous cure when left to nature,* or the great increase of

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if cysts at different periods of growth were injected, a tolerably conclusive opinion might be formed, as to their relative degrees of vascularity, and a treatment instituted commensurate with the state of the capillary circulation. Dr. Bostock's observations in the 10th volume of the Medico-Chir. Transactions, on the secretions in diseases of the ovaries, conclude with the following passage. "If it were possible to ascertain the exact condition of the action of the capillaries in their various morbid states, by means of the nature of the fluids elaborated from them, we might hope in this way, not only to obtain a valuable indication as to the means of cure, but that we might perhaps, resolve many curious problems respecting the operations of the animal economy, which are at present quite incomprehensible." It is said that Sir A. Cooper did not succeed in injecting the ovarian sac with quicksilver. Yet this fact by no means disproves the presence of absorbents. In the circulation of the human ovaries, the finest injection cannot be made to pass from the uterine to the fœtal vessels and vice versa; but no one can doubt the existence of vessels, however minute, by which blood is conveyed to and from these parts respectively. If this view is incorrect, on what principles are we to explain the disappearance of fluid in the ovarian sac, under the treatment of iodine and mercury internally, and setons and blisters externally.

* When a cyst has formed adhesions with the corresponding integuments with evident marks of external ulceration, should not the ordinarily recognized principles of surgery be acted upon, and the process be anticipated by puncturing the skin of the side first affected, where its integrity is preserved? or would it be unwise to interrupt nature's proceeding by such a diversion? Some years ago I was hastily summoned to a poor woman under the care of Dr. Birt Davies, of this place, from whose abdomen a large cyst had suddenly burst, externally. The bedding was saturated with the discharge, and the floor covered with a serous fluid, making its way through the ceiling to the apartment underneath. Quantities of hydatids were also passed, and although the life of

fluid after the operation of tapping with suppuration of the cyst, and of the inefficacy of all treatment. Cases in corroboration of these views, are stated in detail. If we refer to the second volume of the Medical Observations and Inquiries, page forty-one, we shall find that Dr. Hunter was impressed with very similar sentiments; he says, "if I may form a judgment from what I have seen, both in the living and the dead body, I should believe that the dropsy of the ovarium is an incurable disease; and that a patient will have the best chance of living longest under it, who does the least to get rid of it. The trocar is almost the only palliative." To this general reasoning, if exceptions were admitted, I could very cordially subscribe, for when we bear in mind that the disease may remain stationary and harmless for twenty or thirty years, the patient (as Dr. Clarke was wont figuratively to observe,) walking about and enjoying herself, what would be more injudicious than to interfere with so much comparative comfort, or incur the slightest risk, even of the mere inanition which has been known to succeed the abstraction of a large quantity of fluid. When we recollect the increased vascular action in a large cyst, the rapidity with which the fluid is re-produced, too often bearing a corresponding ratio to each successive tapping, with the consequent diminished powers of constitution, what man of common sagacity could entertain a different opinion? "Sufficient unto the day is the evil thereof." But the pressure at length becomes less accommodating to the patient, and various symptoms arise exposing her to sufferings to which for many preceding years she had been either wholly or partially exempt.

The records of established facts are, I conceive, opposed to the assumption of suppuration occurring as a sequel or direct consequence of tapping. The inference is by no means a legitimate one, since suppuration (an unusual result of inflammation of serous surfaces,) may be formed in cysts that have never been penetrated at all, whilst on the other hand, punctures have been made to the hundredth, or even a greater number of times, with complete immunity from suppuration, death having at length arisen from the cysts not being sufficiently emptied to materially remove the particular pressure which called for the operation.

It is, I believe, very generally admitted, that the wound of the peritoneum from tapping, is very rarely succeeded by inflammation, (as inferred by the absence of pain and every other mark of injury,) whilst the most complicated disorganization that I have yet witnessed in this disease, occurred on the examination of a person who, during life, declined submitting to this mode of relief.

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the patient was reduced to instant peril, re-action took place, and recovery (extraordinary in itself,) was eventually perfect. The woman is alive and in health at the present day. The inanition had very nigh proved fatal. Her appearance resembled that of a person who had suffered a very dangerous uterine hæmorrhage; a narrower escape no woman ever experienced.

As a dernier resort, then, or as a choice of evils, tapping is essentially demanded for the relief of other organs and functions independently of those of respiration. The distension alone may be intolerable. The pain itself, whether occasioned by pressure on the nerves, or by suppuration, may require the cyst to be opened. In a case in which I drew away the fluid a considerable number of times, the patient who had laboured under the disease many years, and who was much prejudiced against tapping, became at length most solicitous to have the fluid removed, solely in consequence of the increasing pain, and the fluid abstracted even at the first operation, evidenced marks of active inflammation. Obstetrically considered, this question is peculiarly interesting. In diseases affecting either one or both ovaries, it is admitted, that so long as a healthy portion remains sufficient to elaborate a single vesicle, impregnation may take place.

The ovarium, when not excessively enlarged, is apt to fall down between the vagina and rectum, proving a source of much inconvenience in the unimpregnated state, and highly dangerous when connected with parturition. A fatal case of this complication was reported to me as having recently occurred. Instances are, indeed, recorded of these tumours being tapped both through the vagina and rectum, with success, during labour; but whenever circumstances admit of their being carried above the brim of the pelvis, this safe and efficient mode of proceeding should always be adopted in preference to puncturing the sac, which, under this peculiar complication, must necessarily be attended with increased hazard. In these cases, whether independently of, or connected with, pregnancy, the os uteri is usually forced under the symphisis pubis; indeed, the tumour has been known to displace the womb, even to complete retroversion, an instance of which in the unimpregnated state, occurred in a young woman I once had an opportunity of seeing.* That accomplished surgeon, Mr. Hodgson, in a case of dropsical ovary, unconnected with pregnancy, once tapped the tumour per vaginam, where the bulging was very prominent, and the operation was successful.

When the tumour is seated low in the pelvis, the pressure over the iliac veins and lymphatics has been so great, as to occasion a highly congested and œdematous state of the inferior extremities, not only irksome, but dangerous. I attach but little importance to the retention of urine occasionally accompanying this disease, inasmuch as a catheter that corresponds with the gene-

* Dr. Merriman, a most experienced practitioner, has published a paper upon this subject, in the 10th volume of the Medico-Chir. Transactions. Eighteen cases are referred to. The Doctor concludes by stating, that "the evidence we at present possess, is more in favour of opening the tumours when they contain fluid, than of any other mode of procedure; for of the nine women who recovered more or less perfectly, five appear to owe their safety to this operation."

rally altered and lengthened form of the urethra, will produce the desired relief. But there are other states paramountly demanding the use of the trocar: the first is suppression of urine; experience abundantly testifies how tardily the kidnies act when under the influence of a high degree of pressure, and how efficiently their action is renewed on the pressure being removed. Now when the urinary secretion is entirely suspended, in conjunction with symptoms characteristic of the suppression, how is temporary relief to be afforded but by the trocar being, as Dr. Hunter observes, the only palliative. But perhaps the most serious consequence of ovarian pressure, is the progressive interruption to the discharge of the alvine evacuations, until at length a complete obstruction is effected, the pressure not even allowing the passage of an injection. That several lives have been reduced to the most imminent danger under this condition of the bowels, and preserved for weeks by the trocar, I have it in my power to testify. I am allowed to refer very prominently to a case of this kind, wherein Mr. Hodgson was consulted, when after the abstraction of the fluid, the bowels could be acted upon by the ordinary means. In a second case reported to me by this gentleman, the operation was unavailing, and the patient died from the intestinal obstruction. It may be said that life is not worth retaining under such a state of existence, but as Dr. Blundell has well observed, since years are composed of months, and months of days, a prolongation of these days, even for a period comparatively short, we, as practitioners, should, on the soundest principles of our art endeavour to obtain; the object should weigh with us in our recommendation of measures, whatever value the patient may have formed of her own existence. In the case of a lady of this town, the fluid was withdrawn for the first time, under circumstances of apparently instant peril. The relief was not only present, but so very marked, that she survived to undergo ten additional tappings, including a period of six months.

In all cases of encysted dropsy, tapping must ever be performed under circumstances comparatively disadvantageous, and the benefit to be derived will depend upon incidents which it may be difficult to foresee. For instance, as to the precise character of the disorganization, the thickness, size, and number of the sacs, the situation of the larger ones, whether they are separate or communicate together; and whether their contents are fluid, gelatinous, or of the nature of hydatids. As we usually find several cysts, each having an existence independent of the other, it is most material under so complicated a state, how we proceed in the operation, especially where performed under circumstances immediately affecting life. After having emptied one cyst, we should cautiously examine with a probe for another beyond it; the sensation communicated to the hand will afford a tolerably correct criterion whether we can safely repeat the puncture, which, when practicable, should be renewed, until sufficient fluid

is drawn off to produce all the relief compatible with the nature of the disease. But on the other hand, the operation may be performed under more favourable auspices, and an organization more simple, as instead of the ovary consisting of a considerable number of cysts, it may be resolved into one, or two communicating together. I have a specimen of the dropsical ovary in my possession, for which I am indebted to the kindness of the senior resident surgeon of our dispensary, Mr. J. Taylor, consisting of two cysts having a joint communication; the larger and superior contained several gallons of fluid, the smaller and inferior not more than about a quart. The cysts were not punctured during the life of the individual from whom this preparation was obtained. To prove that they communicated, it is only necessary for me to say, that the contents of each were discharged through one aperture.* As to the propriety of treating these diseases radically, according to this significant and appropriate vocabulary, upon principles alike undefined and dangerous, but one opinion can, I think, prevail in our day. Mr. Lizars' operations, though important in some respects, are, notwithstanding, most unfavourable in their result, and yet the London Medical Gazette of the 28th of November last, contains an account of a diseased ovary being extirpated with success, even after tapping had been performed seven times.

It has recently been alledged, that the science of abdominal surgery is at present in its infancy; that it is most susceptible of improvement, the best informed will be the first to admit; and although it can never be so far advanced as to be near perfection, it must have undergone great alteration before these operations can have acquired general sanction. Whether we advert to the old operations of introducing a tent, injecting the cyst, or cutting a portion of it away; or the more comparatively modern ones, of opening the abdominal cavity and removing the dropsical or schirrous ovary, either at the commencement of the disease, or when it has attained a considerable magnitude, we have much to discountenance, and but little to encourage us in the performance. The foregoing remarks are respectfully submitted to the readers of your Journal, in the hope that the scattered rays of our subject may be concentrated by some able and zealous member of our profession, so as to admit of a conclusive practical application. The published cases of ovarian affection fully attest the frequency of the disease, and whilst unprepared to shew that an analysis of the numerous instances on record would lead to a result directly beneficial, a cursory perusal of them will at once evince that in the more doubtful points of practice, we proceed without any fixed principle whatever, and that until we are governed by more certain data, our proceedings will neither be consonant with science, nor successfully exerted in behalf of suffering humanity.

* See Dr. Blundell's Lecture, No. XX. in the Lancet, for March 21, 1829, on the nature of the cyst especially.

I am moreover induced to believe that Dr. Darwall will regard these observations rather in the light of an appendix to his paper, than as strictures upon the accuracy of his communication, it having appeared to me that, however correct his inferences and reasoning are in the abstract entitled to be held, he has generalized beyond the strict and legitimate object of what I am persuaded he has ever in view, the maintenance not only of the truth, but of the whole truth.

ARTICLE VI.

Physiological Observations on Suckling.

To the Editor of the Midland Medical and Surgical Reporter.

Sir,—Were it perhaps more publicly known, that man partakes of the peculiar genius and temper of the female by whose milk he is reared, ladies of rank and fashion would be more generally induced to suckle their own offspring. For those who have written upon the subject, seem to have dwelt upon the evils which the contrary and prevailing practice is productive of, simply to the physical, with little or no reference to the moral or intellectual, part of our being, though the two be so intimately connected, that the one can never be at ease whilst the other is in any way afflicted; and as this truism forms the ground work of these speculations, it is necessary, in order to show how our physical holds in subjection our moral nature, to make a few physiologico-metaphysical observations.

The nervous system consists of two great classes of nerves, the cerebro-spinal proceeding from the brain and spinal cord, and those called the ganglionic, arising from the great sympathetic nerve. Each set have their distinct offices and stimuli; the first transmit to the mind sensations from without, and so maintain our relations with external objects; the last regulate the immediate functions of life, whence spring those sensations which are the cause of all instinctive determinations. Thus we have two kinds of physical sensibility, divided into percipient and latent; the former producing its effects *with*, the latter *without*, a consciousness of impressions, and these are the two grand sources of knowledge, viz. the external senses and the internal organs, or in other words, reason and instinct. For the mind, or that divine ray infused into the body with the breath of life, accommodates itself to the weakness and imperfections of the tenement it inhabits; all its endowments are gradually unfolded and developed, so as to assume a local habitation and a name, by the agencies of the two physical sensibilities. But the progress of reason is very slow, so that in infancy we are entirely guided by instinct, which we have shewn to be an effect produced by the direct application of stimuli to the ganglionic nerves, or those which govern the functions of the vital organs, and convey the impres-

sions there engendered to the mind. Now it is the predominant energy of any system of organs, whence these impressions issue, that establishes the temperament, and the temperament the specific character of man.

These facts being thus adjusted, we may readily conceive the process whereby the innate dispositions of a child become so perverted, by the stimulus of the milk of a woman of different age, temperament and habits, to its mother, as to imbibe propensities directly at variance with those inherited from its parent, either towards virtue or towards vice. Does not every perturbation of mind on the part of a nurse, so infect the milk, as to produce a corresponding emotion in the child? as she is cheerful or sorrowful, the babe at her breast surely participates. Then if a child participates in the temporary feelings of excitement or depression of its real or foster parent, why not in time partake also of her ruling or predominant passions. No doubt they do, and several instances may be adduced wherein such changes have actually been brought about, and not in men alone, but in other creatures.

We read in the Spectator, of a certain very worthy man, who having been bred with the milk of a goat, was extremely shy and timid in public, but that nevertheless, he had frequently an hour in private, when giving loose to his goatish propensities, he would enjoy a few frisks and capers. It is reported of Caligula, that he did not inherit his cruel and murderous disposition from either father or mother, but that his nurse was of a barbarous savage temper. Tiberius' nurse was unhappily a little too fond of tippling, and the Emperor proved a notorious drunkard. A bitch suckled a pig, which, when grown, would hunt as well as an ordinary hound; and the philosophic Phavorinus observes, that if a lamb be reared with goat's milk, or a kid with that of an ewe, the wool of the one will become hard, and the hair of the other soft. Further we may state, that in the purest ages of Greece and Rome, this influence of the nurse in instilling her own good and bad qualities into the infant she suckled, was no less known than guarded against; and we find it particularly remarked, that, when Rome flourished as a commonwealth, "children were not suckled by mercenary nurses, but by the chaste mothers that bore them;" thus were the Gracchi reared by their mother Cornelia, and Augustus by his mother Attia. From all which we are led to infer, that man materially participates in the nature and inclinations of her, from whose milk the "wheel at the cistern" receives its earliest impulse.

And really when we consider the strange effects which sudden frights or longings have upon the organization of an infant in the womb, it does not appear unreasonable to suppose, that the ordinary way of thinking of the mother, should also have some effect upon the temper of what she bears about her for a period of nine months. Now these physical relations, though loosened, are by no means torn asunder at the time of birth, but, as before,

the child lives upon the substance of its mother, who, moreover, continues to cherish it with the same warmth to which it was exposed when a part of herself. And though these material duties be declined by the mother, the argument holds good, for a nurse soon contracts the instinctive solicitude of a parent, for the infant brought up on her breast, her hopes and her fears are centred in its well being; and if she be a woman of an agreeable temper, in the habit of indulging such sentiments only as are cheerful and happy, the milk secreted is of a more healthy quality, and abounds in the elements of truly honest feelings, which being infused into the temperature of the child, leave a tincture behind which no future education can wholly eradicate. And hence, under some circumstances, some nurses deserve a preference, for a mother may be so cruel, drunken, or otherwise ill disposed, as to render it desirable to correct and qualify the hereditary temperament of her offspring, so as to improve the breed as much as possible. But these observations more particularly concern those whose moral affections are more polished and refined; the high-born dames of old England, whom we would fain persuade to imitate the example of the Roman matrons, and so transmit the virtues which animate their bosoms, unsullied and uncorrupted, to the hearts of their sons.

If, Sir, you think the above worthy of a place in your interesting Journal, its publication will much oblige

Your obedient Servant,

R. ROBERTS, M. R. C. S. LONDON,

Surgeon to the Chester Lying-in Charity, &c.

10, Abbey-street, Chester,
Oct. 17th, 1829.

ARTICLE VII.

A Case of RUPTURE of the CŒCUM.

To the Editors of the Midland Medical and Surgical Reporter.

Gentlemen,

If you think the following case worthy a place in your valuable publication, it is perfectly at your service.

I am, Gentlemen,

Your obedient Servant,

GEORGE SHEWARD.

Upton-upon-Severn.

Thomas Slater, a labouring man, about 56 years of age, in passing through a gateway with a team of horses, was jammed between the cart shaft and the gate post. I saw him about twelve o'clock, three hours after the accident happened. He complained of a dull pain in the umbilical region, increased by pressure; pulse slightly accelerated; had not been sick, or felt any uneasy sensation either in the head or stomach, and had passed his urine freely after having walked home, a distance of two miles.

A large scrotal hernia on the right side, attracted my attention, but I was given to understand that it had been down for years, and that he had never worn a truss; and as there were no symptoms to induce me to suppose it was involved in the mischief, I contented myself with taking eight ounces of blood from the arm, which caused him to faint, and ordered some saline carthartic medicine, and warm fomentations to the bowels.

At three, p. m. on the following day, I saw him again. The medicine had not moved his bowels, but he had passed his urine two or three times during the night. About seven this morning, he commenced vomiting, which continued at intervals of about twenty minutes during the day, and he was drenched in a cold perspiration. The matter thrown up was thick and slimy, of a dark coffee-ground colour, and must have been considerable in quantity. The pulse was hardly perceptible; abdomen painful, but not more so than yesterday, although both it and the hernia seemed more tense. There was little change in the countenance, and during the time I remained in the room, which was near half an hour, he had no attack of sickness. I gave him ten grains of compound extract of colocynth, with four grains of calomel; ordered him to be put in a warm bath, and to take a scruple of jalap, with five grains of scammony, every two hours until the bowels were relieved.

About five o'clock, he had a fresh attack of vomiting, and although five minutes before, when his wife left him, he did not appear worse than he had been all day, he was dead before she could get up stairs.

Mr. Goodman and myself examined the body 48 hours after death. On cutting into the hernial sac, a serous fluid, having a strong fœcal smell, escaped; the contents of the sac were highly inflamed, but the ring was obliterated, and the opening sufficiently large to allow of the passage of four fingers. The colon, part of which was protruded, was inflamed to some extent, and the convolutions were glued together by a gelatinous kind of fluid. There were no traces of peritoneal inflammation on the left side, and the small intestines appeared healthy.

A quantity of thick fluid, having a fœcal smell, was found in the cavity of the abdomen; and feeling convinced that there was an opening in the colon, I requested Mr. G. to examine that intestine very attentively, especially towards the upper part, when he discovered a longitudinal opening, about half an inch in length, in the cœcum, about an inch from the root of the vermiform process, through which opening a fluid, similar to that found in the sac, and in the cavity of the abdomen, exuded. The peritoneum, and adjoining portions of the intestines, were highly inflamed and gorged with blood, especially that part of the gut between the seat of the injury and the hernial sac. The tranverse colon was inflamed, but there were no marks of general peritoneal inflammation, sufficient to account for the fatal consequences that ensued.

As I consider the principal danger likely to result from accidents of this kind, to arise from inflammation of the peritoneum, I am at a loss to account for the rapid termination of this case, where the symptoms of such inflammation were so slightly manifest.

The wound was small in proportion to the size of the intestine, which will account for there being no great quantity of matter passed through it, though, from the opening having been longitudinal, contraction of the intestine must have dilated it. Being a lacerated wound, there was no chance of adhesion of the edges, or eversion of the internal coat, which processes may take place in incised or punctured wounds.

It is well, perhaps, for the credit of our profession, that cases of this kind are of exceedingly rare occurrence ; in fact, so rare, that the only one I remember to have read, and which bears great similarity to that I have just related, is quoted in a work,* which, as I think it probable may not have fallen into the hands of the majority of your readers, you will excuse my repeating.

Quelquefois un intestin se trouve ouvert sans qu'il y ait lésion manifeste en plaie aux parois abdominales. Lombard rapporte qu'un soldat fut renversé d'un coup de pied de cheval reçu à la région hypogastrique moyenne. Le lendemain il se rendit à pied à l'hôpital où il ne se plaignit que de douleurs sourdes dans cette région, sans lésion et sans changement de couleur à la peau. Le pouls petit et faible parut exclure la saignée. On appliqua sur le ventre des fomentations aromatiques, on prescrivit des cordiaux intérieurement, et des lavemens. Le malade s'affaiblit, et mourut au bout de quelques heures. A l'ouverture du cadavre, on trouva à l'iléum, une plaie d'environs trois centimètres à travers laquelle s'était écoulée une matière blanche flocconneuse et infecte qui couvrait tous les viscères, et unissait les intestins comme une espèce de gelée.

ARTICLE VIII.

Two Cases of APOPLEXY.

BY MR. WALDRON, SURGEON, BATH.

January 17, 1827.—Late at night I was requested to see Mrs. Stockman's servant maid, who had suddenly fallen down and become insensible ; when I arrived, I found her comatose, with a slight stertor in her breathing ; her pulse full, slow, and slightly intermittent ; the pupil of the eye morbidly contracted, and the whole of her body suffused with cold perspiration ; she sighed deeply, and ground her teeth together.

* Histoire de l' Etat et des Progrés de la chirurgie militaire en France, pendant les guèrres de la Révolution, ouvrage couronné par la Société medicale de Paris. Par M. Briot, docteur en chirurgie, chirurgien en chéf de l' hôpital de Besançon, &c. &c.

I immediately bled her largely, and directed an active aperient to be given; she was certainly relieved by this treatment, as her symptoms were mitigated, still she remained comatose and insensible.

18th.—The bowels have acted freely; I now opened the temporal artery, which bled very profusely, and in a few minutes sixteen ounces of blood were abstracted. This depletion appeared to afford considerable relief; she became pallid and faint, and yawned repeatedly; her pulse was more frequent and natural, still she remained comatose and insensible. The pupil of the eye appeared less irritable, still it was morbidly contracted; I now directed the head to be shaved, and kept constantly wetted with cloths of cold water. In the evening of this day, seeing that relief to a certain extent was experienced by opening the temporal artery, and that no material change had taken place since the morning, I determined on opening the jugular vein, and took away from this source 12 to 14 ounces of blood; she became faint, but her symptoms again appeared mitigated; I now directed a blister to be applied on the whole scalp, and an aperient to be given; from this time till late the following evening, Jan. 19th, she continued much in the same state, but not in a condition to bear further depletion.

20th.—This morning, at eight o'clock, she expired.

Twenty-four hours after death, I examined the head, in presence of Mr. G. Goldstone. On cutting through the scalp, the vessels appeared congested with blood; on removing the skull cap, the vessels of the dura mater were unusually turgid; on separating the hemispheres of the brain, a peculiar appearance presented itself. The medullary substance of the brain was yellow, and the cortical portion, when cut into, so as to form a line with the corpus callosum, was unusually dark coloured; the arteries of the brain appeared like nerves of the extremities, hard and impervious, and very much enlarged; the plexus choroides resembled a mass of nerves entangled together, though somewhat softer in texture and darker coloured. About two ounces of fluid was found in the ventricles; on cutting through the tentorium, immediately beneath it, on the cerebellum, was a large coagulum of blood.

When Mrs. Stockman's servant maid was last attacked, she was in the 42nd year of her age; prior to this fatal termination of her disease, she had suffered much from pain in the head, stupor and drowsiness, but had not been subjected to any medical treatment. The pupil of the eye, up to the time of her death, was not dilated; even on the evening prior to her decease, the stimulus of light produced contraction, and she evinced a dislike to the glare of a candle; from this I was led to hope that extravasation of blood had not taken place, and as she did not sink so rapidly, as is common in cases of extravasation, relief also being experienced by each depletion, I did not wholly despair of her recovery. The situation of the extravasated blood, will account

why the pupil of the eye was not dilated, since the third pair of nerves and fifth were not pressed upon, which supply the iris. The diseased and peculiar state in which we found the arteries of the brain, satisfied Mr. Goldstone and myself, that in our examination of the cerebrum, we had discovered disease sufficient to account for death, since how was it possible for blood to circulate through impervious vessels? The removal of the tentorium satisfactorily elucidated the positive cause of her death; but we felt anxious to account for the peculiar and morbid appearances of the vessels of the cerebrum, which we could not satisfactorily do; and still we are in the dark as to the immediate cause by which such a morbid condition of vessels was produced.

August 11, 1829.—At two o'clock in the morning, I was called up to attend a Mrs. Gardner. When I arrived, I found her labouring under deep stertor in her breathing, totally insensible; the pupil of the eye widely dilated; the pulse full and frequent, and the body suffused with cold perspiration. Although the case appeared hopeless, I did not hesitate upon trying those means, however faint the prospect of my success, which might possibly afford relief. I immediately bled her from the arm, and opened the temporal artery, and succeeded in abstracting 12 or 14 ounces of blood, but at four o'clock she breathed her last.

On the evening of the same day, I examined the brain. On dividing the scalp, and dissecting it from the cranium, a very considerable quantity of serous fluid escaped, and at the occiput, the scalp, in several parts, adhered firmly to the cranium, and was studded with patches of glandular structure, of a scrophulous character, from which a honey-like and curdy matter exuded, mixed with blood. On removing the skull cap, a very considerable quantity of serous fluid escaped, mixed with blood, and the dura-mater appeared elevated and distended; on removing the dura-mater, a quantity of coagulated blood escaped; upon further examination of the brain, every cavity appeared filled with coagula of blood.

Observations.—I learnt from the friends of Mrs. Gardner, that she had suffered very violently from pain in her head, and restlessness, long prior to the fatal termination of her disease, and had been subjected to medical treatment by an intelligent physician of this town, but without relief. From the extensive extravasation of blood, her sudden death is satisfactorily accounted for, also the dilated state of the pupil of the eye, and other symptoms. In both cases which I have now related, the subjects were highly scrophulous. The investigation of diseases of the brain in persons of this temperament, is of great importance, since some of the most dreadful maladies to which human nature is prone, viz. phthisis pulmonalis, tabes mesenterica, insania, &c. &c. are known to attack persons of a scrophulous habit. The intimate connexion between the stomach and brain, and the translation of disease to the brain, where the stomach was pri-

marily attacked, is constantly seen. In a case, which I related in the fifth number of the Midland Journal, of a Mr. Anthony, this fact is clearly illustrated. Was the morbid condition of the vessels, and altered appearance of the brain generally in the case of Mrs. Stockman's maid, the consequence of scrophulous disease? The affection of brain in each case had continued, from what I could learn, for several years, prior to their fatal termination; the difference in symptoms, and duration of attack in the two cases, is worthy of observation, and should lead to a caution in giving a prognosis, since, in two instances, I have witnessed a recovery, where the symptoms were equally urgent with those in the case of Mrs. Stockman's maid. Presuming that the long continued affection of brain in both these cases, originated in scrophulous disease, and that in the first instance it had been considered and treated as such, might not relief have been afforded, a different plan of treatment to that of depletion, &c. adopted, and in all human probability, the fatal termination prevented?

ARTICLE IX.

HOSPITAL REPORTS.

SWANSEA INFIRMARY.

Case I.—Case of Ulcer on the Scalp.

In February, 1829, a sailor, aged 60, was admitted into the Swansea infirmary, with a slowly spreading ulcer on the scalp, situated over the sagittal suture, at the junction of the parietal and occipital bones; it was nearly circular, and about one inch and a half in diameter; the edges were jagged, and the circumference hollow; the attempts at granulating were feeble; the sore was deep, and its surface pale and glassy; the disease commenced two years since, but latterly had increased considerably; his general health was tolerably good, but his face had a bloated and blue appearance; he said he had not lived more intemperately than is generally the case with that class of people.

A great variety of local remedies were tried, in addition to alterative medicines, and attention to his diet, &c. for several weeks. As topical remedies, carrot poultices were used; nitric acid diluted; black wash and carbonate of iron were also applied at different intervals, without benefit; lastly, the surface of the sore was destroyed with lunar caustic, and once with caustic potash; no change took place in the diseased appearances of the part from any of these applications, but after using the potash, when the slough separated, the sore looked much as usual, with an increased depth and circumference; he was very anxious to get it well, and I proposed removing the edges and surface with a knife, hoping, that if I took away the diseased parts, those which were adjacent, might put on a more healthy action, and cause the wound to heal; he acceded to my wish, and it was done, but afterwards, though the appearance of the sore was much improved, the attempts at healing were not perfect or successful; I then thought if I removed a larger portion, it might get well; I did so, and shaved off the surface of the wound as close as I could to the pericraneum; after this it was perfectly healed in a few weeks. The only dressing

used was at first a poultice, and latterly black wash, and sometimes resin cerate, in which a portion of black oxide of mercury was mixed; these dressings agreed with it better than any other application. It is now some months since he left, and he remains well.

Case II.—Sycosis Menti.

I have lately seen two cases of this disease, which readily got well by antiphlogistic means, and by carefully and freely puncturing the pustules as they appeared. I found the progress of the complaint very much shortened, by frequently scarifying the diseased parts with a cupping instrument; they bled very freely, and the disagreeable heat and burning sensations were greatly relieved by it. I did it very frequently, sometimes every, or every other day.

Case III.—Cataract.—Operation.

David Lewis, aged 64, in November, 1828, was admitted a patient at the Swansea infirmary. In consequence of an accident which he met with about forty years ago, he lost the use of his right eye, a cataract having formed; the left eye always remained good until within the last two years, when his sight gradually failed, and he became blind, the eye being amaurotic. On looking at the eye in which cataract had formed, it was observable that the lens had become absorbed, the tough opake capsule only remaining, extended across the pupillary aperture; the iris acted well. I introduced a needle on several occasions, and gradually succeeded in removing the cataract from its ciliary attachments; it was far too tough to allow of a probability of its being absorbed, and I endeavoured to depress it from the axis of vision, but failed, as it floated again; after waiting some days, I made a cut in the lower edge of the cornea, and extracted the cataract with a hook; a small portion of the vitreous humour escaped, which I believe would have been avoided, had I not attempted to depress the capsule in the first instance. The case, however, did very well, and the man was in a short time able to read and write, with the aid of suitable glasses. He continues well up to the present time, or at least, was so a few weeks since.

In this case, although previous to the operation, light was distinguishable with the eye in which cataract had formed, he seemed to possess nearly an equal power in the amaurotic eye, nor was the iris of that eye insensible to the stimulus of light.

Case IV.—Wound of the deep seated Palmar Arch

On the 1st of July, 1829, Thomas Jones, carpenter, aged 26, came into the Swansea infirmary, for an injury which he had met with, a fortnight before, in using a chissel, the sharp part of which penetrated the palm of the hand, between the metacarpal bones of the thumb and forefinger, and passing onwards, wounded the deep seated palmar arch; violent bleeding was the result, but this was stopped by pressure, and all seemed to do well for three days, when, in consequence of some exertion, a gush of blood came on; from this time, every, or every other day, a recurrence of hemorrhage took place, notwithstanding the attempts that were made to restrain it. When he came to the infirmary, he was much exhausted, and had the appearance of a person whose powers had been greatly reduced by repeated bleedings; his pulse was rapid and feeble;

his countenance pale and anxious, and the parts surrounding the wound were greatly inflamed, the wound itself being much enlarged by sloughing and ulceration; the tendons of the flexors, and the adductors of the thumb, were exposed, and in a sloughing state; on passing a probe into the wound, which was large, and filled with coagulated blood, it passed down towards the carpal extremities of the metacarpal bones of the hand, which induced the belief that thereabouts the injury was: soon after he had been put in bed, hemorrhage came on, which was at that time restrained by the turnequet; he was so much exhausted from his journey, that I did not like to disturb him, and could not use direct pressure to the bleeding vessel with any advantage, in consequence of the very inflamed state of the part; during that day the bleeding did not recur, except slightly, but on the next evening, violent hemorrhage came on, and I then cut down on the radial artery above the wrist, and finding the bleeding not stopped, though greatly checked by this, I tied the ulnar artery also, on which, after washing the wound with cold water, the bleeding ceased, except some very slight ousing; however, during the night this continued, and on the morrow also, when I apprehended that the man would sink, notwithstanding every effort; I then cut some pellets of sponge, and filling them with saturated solution of sulphate of zinc, put one into the bleeding wound, changing it often; this soon completely stopped the bleeding, nor did it again return; the cutting off the full supply of blood from the hand, seemed to exert a very beneficial effect on the inflamed parts, for they all looked greatly better on the following day. Nothing further worthy of remark occurred during the progress of the case; the parts were covered with a cold linseed poultice; the slough soon separated, and the hand did well. On the 6th of August he left the infirmary, quite recovered, but with the thumb somewhat contracted, in consequence of the sloughing.

Case v.—Labour, with attachment of the Placenta to the Os Uteri.—Transfusion performed.

The subject of the following case, was a middle-aged woman in this neighbourhood, who was so greatly exhausted from hemorrhage, that she appeared in a dying state; she had had repeated floodings for a fortnight before I was sent for, and for a few hours previous to my visiting her, it had become so profuse, that she could scarcely speak, and had a sunken and pallid countenance, with a very weak and rapid pulse; on examination, I found the placenta attached to the os uteri; I immediately delivered her, when the uterus contracted and the bleeding ceased; but she was still further exhausted, upon which, with the concurrence of my friend, Doctor Gibbon, of this town, who kindly gave me his assistance, about four ounces of blood procured from her husband's arm, were transfused, with a very apparent and decided benefit. She went on quite well for some days, when an attack of phlegmasia dolens interrupted her convalescence; but she recovered, and has done perfectly well, though she remained weak for some time.

The instrument used was Read's apparatus; the only difficulty experienced was some degree of ecchymosis in the arm, which came on about the close of the operation, and arose probably from my not being at that time accustomed to use the instrument, added to which, the room we were in, was dark and inconvenient.

GEORGE GWYNNE BIRD.

BIRMINGHAM EYE INFIRMARY.

To the Editor of the Midland Medical and Surgical Reporter.

Sir,—I have sent you the following report of the diseases, &c. treated at the Birmingham Eye Infirmary, during the last three months, in the hope that it may be found not altogether uninteresting to some of my professional brethren.

I am, Sir,

Your's, &c.

RICHARD MIDDLEMORE,

Assistant Surgeon to the Birmingham Infirmary for diseases of the Eye.

Temple Row, Dec. 28, 1829.

Simple acute ophthalmia, 51; chronic ophthalmia, 20; acute ophthalmia, with pustules of the conjunctiva, 33; ditto, with ulcer of the cornea, 18; (a) Acute ophthalmia, with purulent secretion, 7; purulent ophthalmia, 11; strumous ditto, 25; (b) Gonorrhœal ophthalmia, 2; rheumatic ditto, 2; (c) Irritable ophthalmia, 7; granular and cuticular state of the conjunctiva, 5; pterygium, 1; vascularity of the cornea, 9; opacity of the cornea, 20; increased and diminished convexity of the cornea, 3; simple acute iritis, 14; chronic iritis, 3; arthritic iritis, 1; strumous iritis, 4; syphilitic iritis, 1; (d) Cataract, 7; (e) Dislocation of the lens, 3; amaurosis of various kinds and degrees, 13; glaucoma, 1; ptosis, 3; strabismus, 3; (f) Fungus, 1; inflammation of the palpebræ, 3; tinea, 28; lippitudo, 3; hordeolum, 5; entropion, 2; ectropion, 1; tumours in the eye-lids, 7; carcinomatous, and other malignant ulcerations of the lids, 2; paralysis of the puncta lachrymalia, 2; inflammation of the lachrymal sac and duct, 3; fistula lachrymalis, 2; (g) Partial and general dilatation of the lachrymal sac and duct, 2; stricture of the lachrymal duct, 2; wounds of the eye-ball and its appendages, 7.

a—In this form of ophthalmia, and that immediately succeeding, the unguentum argenti nitratis, as recommended by Mr. Guthrie, has been specially useful; it has also been successfully employed in that condition of the cornea usually termed vascular; it has likewise been used in many other forms of disease, but with very equivocal advantage, and in many cases it has appeared to be even injurious.

b—These two cases presented several points of interest, but I shall not extend my observations by entering into detail, further than to mention, that in both cases, gonorrhœa existed, the discharge of which was not much influenced by the inflamed condition of the eye; only one eye was affected; although I feel confident, from the thoughtlessness of the patients, the matter from the diseased eye was rubbed by the handkerchief, pretty freely upon the healthy one; the eye of each patient was destroyed.

c—A disease of a well-marked character, chiefly affecting women who have continued to suckle their children for an unnaturally long period.

d—Of these patients, four were operated upon; in one, Saunders' operation was performed; in the three others, the customary operation for extraction was employed, the section being made at the lower half of the cornea. The results, as marked in the operation-book, are as follows:—

—— Farre, æt. 64, lymph cataract in the left eye; discharged, after three weeks' residence at the infirmary, not much benefitted by the operation.

—— Wisedale, æt. 66, cataract in each eye; discharged, after staying six weeks at the infirmary, with excellent vision; eyes perfect in appearance.

—— Farman, æt. 49, lens of the left eye partially ossified; remained in the house a very short time; vision moderately good, although a bad case for operation.

—— Lowe, æt. 78, capsulo-lenticular cataract in the right eye; resided at the infirmary five weeks; discharged with very useful sight; eye perfect in appearance. This patient, in consequence of her great age, was permitted to continue her customary diet after the operation.

e—Of these three cases, one was spontaneous, another the result of accident, and the third the product of disease. In two of these cases, the pain and inflammation occasioned by the pressure of the lens upon the iris, were speedily and permanently relieved, by its removal; and in both cases, vision (imperfect) was restored. Whilst upon this subject, I wish to mention, that Mr. Smith, of Southam, obligingly sent to the infirmary for our inspection, a man whose lens was dislocated, and passed into the anterior or posterior chamber, according to the position of the head; it was natural in size, figure, and transparency, and had undergone no alteration since the spontaneous dislocation (which occurred many weeks before I saw him,) took place. This case is very peculiar, and as far as I remember, without parallel.

f—A well-marked case of fungus hæmatodes of the eye-ball, occurring in a child five months old.

g—Lateral bulging or enlargement of the lachrymal sac and duct, is, of course, detected by the passage of a probe.

KIDDERMINSTER DISPENSARY.

Annual Report of Diseases admitted to the Kidderminster Dispensary, from Lady-day, 1828, *to Lady-day*, 1829.

Diseases.	Admitted.	Cured.	Relieved.	Died.	Irregular.	Under cure Mar. 25.
Inflammations, chiefly acute,...	98	62	19	8	2	7
Fevers, ...	60	42	4	5	1	8
Cholera morbus, diarrhœa, &c.	32	23	7	0	0	2
Gangrene and mortification, ...	6	1	1	3	0	1
Rheumatism, acute and chronic, ...	26	18	3	0	2	3
Apoplexy and plethora, ...	8	7	1	0	0	0
Small pox, ...	6	4	1	1	0	0
Eruptions, ...	51	31	16	0	0	4
Hæmoptysis, Hæmatemesis, Menorrhagia, &c.	8	0	5	0	0	3
Chest complaints, cough, asthma, &c. ...	104	47	35	8	3	11
Liver complaints, ...	54	27	13	5	1	8
Impaired sensations, deafness, ...	12	6	6	0	0	0
Amenorrhœa, constipation, ischuria, &c. ...	15	5	4	0	2	4

Uterine diseases, ...	5	2	3	0	0	0
Hydrocephalus, ...	10	2	3	3	0	2
Teething, ...	2	2	0	0	0	0
Hysteria, epilepsy, chorea, ...	27	9	11	0	1	6
Worms, ...	4	3	0	0	1	0
Heart diseases, ...	14	1	9	2	0	2
Dropsy and jaundice, ...	18	7	7	4	0	0
Consumption, ...	20	0	7	10	0	3
Indigestion, ...	214	130	65	1	3	0
Scrophula and debility, ...	30	7	21	0	2	0
Ophthalmia, ...	21	17	3	0	0	1
Cancer, ...	10	0	7	0	2	1
Hip and spine diseases, ...	9	3	4	0	1	1
Hernia, ...	3	1	2	0	0	0
Venereal, ...	22	14	7	0	0	1
Wounds, sprains, abscesses, ...	77	46	25	0	4	2
Tumours, contusions, &c.	62	28	25	2	1	6
Burns and scalds, ...	6	5	0	1	0	0
Fractures and dislocations, ...	10	10	0	0	0	0
Total, ...	1115	621	324	53	26	91

Case of Aphonia.

June 23, 1829. This morning, James Millward, a weaver, aged 34, while at breakfast, was affected suddenly with a trembling, attended by a feeling of coldness and numbness, from the pit of the stomach up to the throat, and soon afterwards it was found that he could utter no sound, although the lips and tongue could be moved with the usual ability. He is perfectly sensible, and answers negatively or affirmatively, by a motion of the lips. He can swallow with perfect ease. He has, by turns, heats and chills, and when the former occur, a diffused rash arises about the extremities, and the face is, at the same time, flushed. The pulse is moderate, and about 88. All parts of the interior of the mouth and fauces, are natural, except that the tongue is thickly coated and white. The evacuations are reported to be healthy, and no complaint of pain is made, except that he has a head-ache, which has affected him for two days. The countenance expresses the most intense anxiety.

About ten weeks ago, the patient was much troubled with tape worm, from which he was relieved by medicine, and his health was good until the present occasion. He cannot attribute his complaint to any cause whatever. He has the appearance of poverty and hard work. Temporibus applic. hirud. xij. sumat 3tiis. horis mixt. assæfœtidæ, 1 oz. He had already taken a powder of calomel and jalap.

24th.—Head-ache relieved; anxiety diminished; other symptoms unchanged. Medicine operated, producing watery evacuation. A large blister ordered between the shoulders, with a cold lotion to the head, and pills of calomel and colocynth.

25th.—No head-ache; bowels costive, but relieved by the pills.

27th.—His general health gradually improves; bowels strongly affected by the pills. In the middle of the night he awoke from a terrible dream, and

spoke faintly in a whisper. From this time till the second of July, he spoke faintly and in a whisper. Cathartics were used, from the idea that the alimentary canal was the part to which all the mischief was to be attributed, and carbonate of ammonia in solution, with a bitter. During this treatment, great quantities of very foul, dark, and offensive matter, were voided. The man gradually improved, and was discharged in a fortnight, cured, and without any remains of his complaint, except weakness of voice.

Being aware of the man's having had the tape worm, I attributed the attack to some cause of irritation in the bowels, from the first, or to tape worm. But I thought it was justifiable to attempt to relieve the pain in the head by leeches, as he seemed excessively annoyed by it, and could get no sleep. The leeches entirely succeeded in the object, and left no debility or other ill effect behind.

WORCESTER INFIRMARY.

The Number of Patients treated in the Worcester General Infirmary, from the 1st of January, 1829, to the 1st of July, 1829, (exclusive of those previously on the Books,) amounted to 566; of these 277 were medical, 289 surgical Cases.—Males, 337; Females, 229.—In-Patients, 267; Out-Patients, 299.

General Results.—Cured, 297; relieved, 39; discharged at their own request, 3; for irregularity, 25; dead, 14. Remaining on the Books July 1st, 1829, 189.

Diseases.—Abscess, common, 12; Psoas, 2—Asthma, 2; Amenorrhea, 8; Anomalous, 46; Anthrax, 1; Anasarca, 1—Bronchocele, 3; Burn, 3; Catarrh, 1—Cephalalgia, 16; Concussion of the Brain, 1; Contusion, 13; Chorea, 3; Cutaneous Eruptions, 11; Cynanche Tonsillaris, 4; Diabetes, 3; Diarrhœa, 2; Dislocation, simple, 2; Dropsy of Abdomen, 3; Thorax, 2; Tunica Vaginalis, 3; Dyspepsia, 43—Exostosis, 2; Eye, diseases of, 25; Fever, continued, 7—intermittent, 2—remittent, 1; Fistula, 4; Fracture, simple, 14—of extremities, 7—compound, of extremities, 7—Jaw, 1; Ganglion, 1; Gonorrhea, 2; Hæmorrhage from Lungs, 4; Heart, organic diseases of, 3; Hæmaturia, 1; Hæmorrhoids, 2; Hernia, 40; Hypochondriasis, 2; Hemiplegia, 3; Inflammation of the Brain, 2—Bronchi, 17—Liver, 16—Lungs, 17—Pericardium, 1—Peritoneum, 5; Jaundice, 1; Joints diseased, 32; Leucorrhœa, 2; Lumbago, 13; Phthisis Pulmonalis, 3; Prolapsus Uteri, 2; Pneumonia, 5; Psoriasis, 2; Rheumatism, Acute, 8—Chronic, 19; Scald, 1; Schirrus, 1; Sciatica, 2; Scrofula, 3; Spine, diseases of, 5; Stricture, of Œsophagus, 0; Urethra, 6; Syphilis, 4; Testes diseased, 2; Tracheitis, 4; Tumour, 9; Ulcers, 39; Varicose Veins, 2; Wounds, 25.

H. COLE.

Case 1.—Aneurism.—Ligature of the Femoral Artery. Amputation.—Recovery.

1829.—John Milner, æt. 30, was admitted into the Worcester infirmary, Sunday, Oct. 3rd, under the care of Mr. Pierpoint.

Is a hard working man, and accustomed to lift great weights. Thinks himself healthy in general, but has had asthma from his birth. About five weeks ago, he was attacked with pain just above the knee, extending to about the middle of the thigh, where he said there was a small hard lump, in which he felt a beating, particularly when he pressed his hand upon it, in the act of milking. He says that ever since a kick which he received from a horse, 20 years ago, there has been a tumour about the size of a large pea, about the middle of his thigh. Had advice for it a month since. Leeches and blisters were applied at different times. The thigh was rolled up, under the pressure of which it began to swell exceedingly; six days since, supposing the tumour to be an abscess, a lancet was introduced, and a little coagulated blood came away, and on the following day the wound burst, and about 3 pints of blood gushed out, and then stopped spontaneously. The wound was then closed, and the limb bound up exceedingly tight. A tumour now extends from above the middle of the thigh to the knee, distinctly pulsating, and a blush of inflammation upon the superjacent skin. The œdema extends nearly up to the groin. The opening in the inner part of the tumour, about the size of a shilling, and a dark speck of coagulum visible, which pulsates very perceptibly. Pulse very languid; some cough; countenance sallow. Exhibits some marks of distress.

4th.—Pulse very languid; bowels open; no pain in the tumour since the bleeding, but some stiffness in the limb. Has lost no blood since Monday last. The femoral artery was tied at three o'clock, p. m., it was taken up about an inch below Poupart's ligament. Took some brandy and water during the operation. Œdema as much as before. The lower part of the thigh in the neighbourhood of the tumour, extremely distended. The wound united by sutures and adhesive plaister. Applic. catapl. com. vulneri ulcerato.

Eight o'clock, vespere. Leg warm. Has had a sensation till now, as if a heavy weight was upon his leg. Seems very comfortable. Sumt. tinct. opii ℥xl. statim.

Eleven o'clock.—Rept. tinct. opii.

5th.—Has had a pretty good night. No pain in the extremity. The temperature of the limb operated upon, in the ham is 95; that of the sound limb is 98. Countenance much improved; speaks cheerfully; pulse 100; tongue clean.

6th.—Thigh much less loaded; grumous discharge from the opening in the tumour; pulse 98. Has passed the night comfortably with much sleep. Contin. remedia externa. Dieta tenuis.

7.—Limb very warm, and no pain. Discharge rather copious from the opening in the tumour. The wound has the same appearance; limb much less swollen, the tumour consequently more apparent. No pulsation in the limb since the operation, and hardly any inflammation about the skin. Pulse 104; tongue clean; bowels open.

8th.—Has passed a good night. Thigh easy and more vigorous. Pulse 98; tongue clean. Œdema of the thigh considerably decreased. Discharge great from the inferior opening. The superior one is looking pale, and not much union; was dressed to-day. No perceptible difference in the lower extremities. Has been much purged. 4 dejections this morning. ℞ conf. aromat. ℈i., tinct. opii ♏ x., mist. cretæ ℥i., M. sumt. post sing. deject. liquid.

9th—Has had a very good night. Did not take the medicine till last night. He has had only one stool since. Tongue clean; pulse 94. Œdema of the thigh nearly disappeared. Wound in the groin much more vigorous, has assumed a reddish appearance. Very copious discharge from the aneurismal opening. Contin. haust. 6tis. horis.

10th.—Has had a very good night. Discharge from the aneurismal opening very copious. Œdema of thigh nearly gone. A counter-opening was made in the thigh, two inches above the ulcerated wound, and an amazing quantity of pus evacuated itself. Pulse 94; tongue clean. Perstet.

11th.—Limb nearly of the size of the sound one; discharge still copious; particles of coagulum were evacuated from both the lower openings. The wound in the groin looks very healthy. Pulse 96; tongue clean; not purged. Adde mist. nunc in usu sulph. quinin. gr. i. Contin. remedia externa. Sustineatur carne et cerevisiâ. Illigetur lenitèr femur ligatione.

12th.—Has passed a very good night. Discharge still continues copious. Pulse the same as yesterday; tongue clean; countenance much improved. Perstet.

13th.—Has had a good night; comfortable in himself. Pulse the same; tongue clean; bowels regular. The discharge from the two lower openings still very profuse. The thigh much diminished since yesterday. The upper wound looks clean and well.

14th.—Slept very well; discharge not quite so copious; pulse the same; tongue clean. A little quantity of coagulum was evacuated. The two lower openings were then laid into one. Perstet.

15th.—The coagulum, on taking off the dressings, was found protruding through the lower wound. On removing it, it was followed by a large quantity of pus. A gush of arterial blood followed, and continued to well out of the wound. The hæmorrhage was restrained by stuffing the wound with lint.

On a consultation, it was determined to amputate the limb, which was immediately done. Pressure was made on the external iliac, but the hæmorrhage was by no means restrained during the operation.

Six vessels were tied. The internal circumflex was very large, and bled profusely; the limb was removed close to the trochanter minor; the aneurismal cavity extended about three inches up the stump between the muscles: he was excessively

exhausted, and 80 drops of laudanum, in some brandy and water, were given him. The aneurismal cavity was found, in its lower portion, to the inner condyle; the bone, for the space of three or four inches, was denuded, and considerable absorption had taken place. There were hardly any remains of the aneurismal sac. The inner coat of the popliteal artery was found much diseased, and a ragged opening was discovered in its upper part. Great destruction had taken place in the soft parts around the bone. Perstet. Latera empl. adhesiv. contiguantur; dein cerat. cretæ applic.

16th.—Passed a good night; pulse 120; tongue clean; stump easy. He had a cup of tea for breakfast. Countenance good. Vespere. Pulse languid; seems very low.

17th.—Looks better; countenance pretty good; stump easy. Had a good night. Pulse 108; tongue clean; bowels open.—℞ quinin. sulph. gr.ij., mist. rosæ acid. ℥iss. M. 3tiis. horis sum.

18th.—Countenance good; stump very easy. It was dressed this morning for the first time. Partial union had taken place; healthy pus evacuated. Pulse 110; tongue clean; bowels open. Perstet.

19th.—Stump dressed this morning: upper wound looks well; discharge from stump very profuse. Drinks his ale; had an egg for breakfast.

20th.—Has had a bad night, with a pricking sensation in the stump. Pulse 106; tongue clean; bowels open; feels rather stronger. Stump was dressed: looks well. The discharge still profuse; upper wound looking well. Nocte, si dolor urgeat, sum. træ. opii ♏xl.

21st.—Has had a good night. Did not take his drops. Pulse 102; tongue clean; feels himself, in every respect, better. Stump easy; looks better; discharge very profuse. On dressing the upper wound, the ligature came away. The granulations from the stump, very healthy and vigorous. Perstet.

22nd.—Slept well. Pulse 104; tongue clean; stump looks well; appetite good. Upper wound looks well. Discharge from stump still profuse. Perstet.

23rd.—Had not so good a night. Pulse 108; tongue clean; bowels open; stump looks very well; discharge not so profuse; upper wound looks well. The granulations from the stump healthy.

24th.—Has had a middling night. Tongue clean; pulse the same; bowels open; stump easy, and looks much better. Upper wound looks well, and is nearly healed. Discharge not so profuse. Perstet.

25th.—Slept very well. Stump very easy, and did not prick and shoot so much as usual; appetite better; feels himself considerably stronger. The stump looks very well; tongue clean; discharge moderate; pulse the same; bowels open and regular. Perstet.

26th.—Not so good a night: had a pain in his back. Pulse 102; tongue clean; bowels open; discharge moderate; stump easy.

27th.—Slept well. Tongue clean; pulse the same; bowels open; stump easy. Applic. arg. nitr.

28th.—Not so good a night. In every other respect the same as on the preceding day. Discharge very little. Perstet.

29th.—Slept very well. Stump looks exeeedingly well; discharge little more than usual, but very healthy. Upper wound perfectly healed. Perstet.

Nov. 2.—Continues gradually improving: general union has taken place. Appetite good; countenance considerably improved.

6th.—Is going on very well.

10th.—Is very much improved in every respect.

12th.—There seems to be a slight sinus on the upper part of the stump; some pus was evacuated. Is very well in himself; appetite better; considerably stronger.

16th.—Says he feels a considerable degree of tenderness and pain in the situation of the sinus.

18th.—Feels no pain where he complained of it for the last two or three days. Stump very nearly healed, except in the middle, where there seems to be an exfoliation of bone.

22nd.—A piece of bone was taken away from the stump this morning, about the size of a bean. Stump looking considerably healed; appetite good.

27th.—Continues improving.

Dec. 8th.—Had a fall this morning upon the pelvis, by which he enlarged the wound in the stump about $1\frac{1}{2}$ inch.

10th.—Appl. comm. catapl.

12th.—Rept. remedia antea in usu. Omit. catapl. com.

26th.—Nearly healed: very well in himself.

31st.—Stump healed. Discharged cured.

Case II.—Aneurism of the ascending portion of the Arch of the Aorta.

Joseph Freeman, 57 years of age, a sawyer by trade, in the habit of working in the pit; a particularly muscular, stout, thick-set man, of the ordinary stature, and has been a hard drinker; was admitted into the Worcester infirmary, September 13th, 1828. Complains of pain in the right side of the chest, much augmented on inspiration, with urgent dyspnœa and cough. Pulse full; tongue foul; bowels pretty regular. There is considerable dilatation, and increased pulsation of the arteries about the upper portion of the same side; and a pulsating tumour, near the size of a pigeon's egg, at the intercostal space between the second and third rib, is distinctly felt, and perceptible, also, to the eye.

From his occupation, he has been in the constant practice of moving very heavy pieces of timber; but has no recollection of the receipt of any particular injury, from which he could date his

present affection. He states that he was first seized about twelve months or more ago, previous to this time, with shooting pains in the right side of the chest, and weakness of the right arm; these symptoms he attributed to cold, and still continued his employment, for perhaps four or five months, being bled for the pain twice at his own request. Finding his disease getting worse, he at length consulted a surgeon, who prescribed frequent topical bleedings, by the aid of leeches, a very abstemious diet, especially avoiding all stimulating liquors, with perfect quietude; from such treatment he derived much benefit. Soon after this, he obtained a letter for the infirmary.

On his admission, he was cupped on the right side, and took a saline aperient mixture every four hours. Low diet. The cupping very materially relieved his breathing; but in a few days, the pain in the side much increased, with accelerated circulation; for the relief of which, leeches were applied, and a mixture, containing the tincture of digitalis, administered three times in the day, keeping the bowels regular, with five grains of the cathartic extract at bed-time. The vinum colchici was also given in conjunction with the tincture of digitalis, and leeches very frequently had recourse to: blisters, too, were used on several occasions.

On the 3rd of November, he experienced a great deal of pain in the tumour, with a sense of rawness, distressing dyspnœa, troublesome cough, and rattling in the throat, (the latter symptom being a very prominent one since his admission,) pulse full and quick; no perceptible difference at the wrists; bowels open; inability to lie on the right side; countenance expressive of the greatest anxiety. Eight leeches to the part in pain. From the remedies employed, the relief he obtained was but temporary; and on the seventh, a seaton was inserted just below the site of the tumour. This, it was evident, in the space of a week, did not in the least alleviate his sufferings; the dyspnœa, in fact, became more urgent, with restlessness and difficulty of lying down in bed, therefore it was very shortly removed. To allay the distress which he experienced from extreme oppression of breathing, always brought on by the horizontal position, a mixture of the spiritus ætheris sulphurici, and mistura camphoræ was given; and a pill, consisting of the extract of hen-bane and extract of white poppies, directed to be taken at bed-time.

During the winter, no permanent benefit was obtained by the treatment; both general and topical bleedings were repeatedly employed, and the remedies varied as the occasion seemed to require; at the same time, a spare diet, with absolute rest, being strictly enjoined; the symptoms, in short, were combated according as they arose, and usually with success. But the disease was making gradual, though almost imperceptible, progress; and towards the beginning of February, he became excessively weak; the pain increased in severity, with increase of pulsation in the tumour; his nights were restless, affording

but little sleep; the cough and dyspnœa exceedingly irksome. The tartar emetic ointment was rubbed on the side, night and morning, and an anodyne linctus prescribed for the cough, the bowels being regulated with occasional doses of the compound extract of colocynth, and the following mixture given three times in the day. ℞ tincturæ digitalis, ℥xv. Syrupi papaveris albi, ʒss. Decocti hordei, ℥i. ft. mistura.

He remained in the infirmary, upon the whole, nearly five months, and was dismissed on the 23rd of February, 1829, being made an out-patient.

After this time, I was in the habit of visiting him at his own house, for his sufferings were such, that he was unable to walk any distance without the greatest difficulty. The last time I had an opportunity of seeing him, the symptoms were all very materially increased. His nights were restless, with frequent orthopnœa; great soreness in the right side, aggravated on coughing; tumour more diffused, the pulsation being evident between the third and fourth ribs, but less vehement than at the intercostal space directly above; carotids much excited; constant head-ache; arm on same side painful, with a sense of numbness and loss of power; tickling cough; distressing rattle in the throat; expectoration neither bloody nor purulent; difficulty of lying down in bed, often obliged to get up and walk about his room from dyspnœa, and a sense of suffocation, occasioned by the recumbent posture; inclination to vomit, with frequent retching; bowels open; urine scanty and dark coloured; tongue with a slight brownish coat in the centre; pulse 112, rather full, regular; eyes glassy; great anxiety.

His chief relief was from the use of leeches, and these to the number of eight or ten, were very often applied.

He survived until the second of August, when having gone out into a back yard, whilst making some inconsiderable exertion, fell down, and expired in a few moments.

Sectio cadaveris.—The body was by no means attenuated, but there was great pallor of the countenance and lips, indeed, throughout the whole cutaneous surface, there appeared a total want of blood in the capillaries. The chest, on percussion, emitted a good sound on the left side, but uniformly dull upon the right, especially around and below the situation of the tumour.

On opening the cavity of the thorax, an aneurism, of a very considerable size, was discovered involving the ascending portion of the arch of the aorta, implicating the arteria innominata, and extending as far as the origin of the subclavian on the left side, the former vessel seeming much dilated and thickened. The tumour extended anteriorly from the second to the fourth rib; but no absorption had taken place in the osseous or cartilaginous structure of either of these, or the intervening one, in contact with the disease. On cutting into the pericardium, a large quantity of serum was removed, and a coagulum of crassamentum was observed completely surrounding the heart, and

forming, as it were, a mould of that organ. The pericardium, indeed, was literally filled and distended with the effused blood; in quantity, I should conceive at least twenty ounces. The heart, itself, was strong, and apparently healthy; it may be, however, somewhat larger than natural. One of the aortic valves had a large process of ossific matter in it, the other two being perfectly free from any deposit of the kind. There was an opening, though partially closed by a plug of lymph, between the sac and the pericardium, through which the blood had escaped, of sufficient size to admit the passage of a small quill; it had no mark of ulceration, but gave to me the impression of a rent. The parietes of the sac were of unequal thickness, in some places an inch or more, in others, not exceeding the twelfth part of one. It was thickest at the front, where confined by the ribs, and this contained within its substance a second tumour, having much the character of a scrofulous gland in a state of suppuration, for on dividing it, a curdy or cheesy kind of matter escaped; it had no opening of communication with the sac. The trachea was much compressed by its contiguity to the disease, and was removed with it, the aneurism being attached by cellular membrane. Very extensive adhesions were likewise contracted both in the anterior and posterior parts of the thorax, and these, together with the flattened state of the trachea, must greatly have diminished the faculty of respiration.

A portion of the aorta below the tumour, being cut out and laid open, exhibited its coats in an unhealthy state; they were generally much inflamed and thickened, the internal one being thrown into rugæ, with here and there numerous irregular depositions of ossific matter and lymph; the latter, when removed, showing a surface nearly approaching to ulceration.

J. N.

Case III. Rupture of the Liver, and consequent Hæmorrhage, proving fatal in 52 hours.

William Page, in driving a cart, on the 9th of November, 1815, was thrown down by a stone, and the wheel passed over his abdomen. He was immediately taken up and carried to the infirmary; when brought there, he had a cold skin, scarcely any pulse at the wrist, a pale countenance, and excruciating pain in the abdomen. He constantly kept the body bent upon the knees. The respiration was much quickened, and he complained of great thirst. In this state he was put into a warm bed, and some warm brandy and water was given to him, and hot cloths were applied to the feet and abdomen; immediately after which he began to vomit, and threw a good deal of food from his stomach. Such was his restlessness, that he did not lie for a moment in the same position.

At 8, p. m. there was no alteration, except that the pulse beat rather more strongly. The skin was cold. There was restlessness, occasional vomiting, and great thirst. He drank a good deal of milk.

At 1, a. m. the pulse was stronger, but still very small and quick. The extremities were warmer, but not at the natural standard. He had severe pain over the whole of the abdomen, with great tension and tenderness. He was bled to four ounces. The pain got easier while he was being bled, but the pulse did not rise. He voided urine, no blood in it. He took five grains of calomel, and had a common clyster with an opening draught.

At 11, a. m. the bowels had not been moved. The clyster came away without any thing. He died at four o'clock in the evening.

Examination, one hour after death.—On cutting through the parietes of the abdomen, the cavity was found full of blood, and about a pint and a half was absorbed by a sponge. The bowels had a general red flush on their surface, and were inflamed. Between the peritoneal and muscular coat of the duodenum, blood was extravasated; and there was likewise the same appearance, for some distance along the arch of the colon, and at that part blood was extravasated in the mesentery. In the cellular membrane surrounding the right kidney, there was much extravasated blood, and the kidney itself was slightly wounded in three places. At the posterior part of the right lobe of the liver, there was a large lacerated wound. The gall bladder was full of bile. The diaphragm was not injured. The spleen, stomach, pancreas, left kidney and bladder, were uninjured.

Thorax.—The heart and lungs quite healthy, except a small part of the left lung lying on the diaphragm, which was very vascular.

ARTICLE X.

Pathological Facts, with Remarks.

BY CHARLES HASTINGS, M. D.

[CONTINUED FROM PAGE 354, VOL. 1.]

Case II.—Empyema pointing externally. Recovery.

On the 25th of February, 1826, J. B. was received under my care in the Worcester Infirmary. He was affected with cough and dyspnœa; copious expectoration of a muco-purulent matter tinged with blood; pulse 100; tongue clean. He was very considerably emaciated: he had been ill five weeks. The complaint began with pain under the left shoulder, and shortness of breathing. Soon afterwards a swelling made its appearance over the pectoral muscle on the same side. In about three weeks afterwards, cough came on, and he spit up, in large quantities, a thick yellow matter. The swelling over the pectoral muscle increased; and fluctuation being evident, it was punctured, and a pint of matter made its escape. After this, the cough and expectoration abated for a time: they however again returned. There was, when he was admitted, a small opening over the pectoral

muscle, between the fourth and fifth ribs, from which there was a discharge of purulent matter. The cellular membrane around the wound was emphysematous. By percussion, the right side of the back, and the whole of the anterior part of the thorax, on the same side, sounded well: but the sound on the left side of the back and on the anterior part of the thorax was very dull. The respiratory murmur was distinctly heard on the right side of the chest: on the left side the respiratory murmur was not heard, but a humming sound when the cylinder was applied. When he coughed, and the instrument was placed over the opening in the parietes of the thorax, a peculiar sibilous sound was produced by the air rushing through the opening into the cavity of the chest.

He was directed—tincture of colchicum and digitalis, of each ten drops three times a day; and a pill of calomel and James' powder every night.

On the 5th of March he was rather better; and on the 8th the cough and expectoration were better, and the discharge from the wound scanty. He continued his medicines.

On the 16th of April, the wound was healed, and he had no cough. The breath was much better: there was more sound on percussion of the left side of the chest, and the respiratory murmur was more distinctly heard. He continued the colchicum and digitalis.

On the 23d of April, there was no cough, and very little dyspnœa; the left side of the chest sounded well on percussion; and the respiratory murmur was becoming distinct.

On the 30th of April, he was discharged cured, the respiratory murmur being nearly as distinctly on the left as on the right side, and his health completely restored.

Observations.—This was a very interesting case, in as much as the powers of nature in repairing a very important organ, when its structure was very much impaired, and, indeed, after the general health had nearly given way, was beautifully illustrated. At the time of admission, both percussion and auscultation shewed that the left lung was quite incompetent to fulfil its office, as it was impermeable to air. The mucous membrane of the bronchia was very much inflamed, and the sac of the pleura contained a considerable portion of purulent matter: the latter obtained an exit externally, and the inflammation of the mucous membrane subsided; after which the left lung again became permeable to air, and the function of respiration was nearly as well performed on the left as on the right side.

The aid that was afforded to the diagnosis, by the cylinder and percussion, was very satisfactory; and it was truly gratifying to observe the improvement in the general health, as the stethoscope indicated the return of the respiratory functions in the affected lung.

It is a fortunate circumstance, in cases of empyema, when the fluid points, as in this instance, to some part where it can obtain an exit without implicating important organs in the process of

suppuration. I lately saw an unfortunate instance in which a purulent accumulation took place in the right sac of the pleura, and, after great suffering, pointed on the right side of the back, near the spinous processes, from whence a large quantity of purulent fluid was discharged. The patient sunk after the operation, and it was discovered, on examination, that two of the vertebræ had become so much implicated in the mischief, that caries to some extent had occurred.

With regard to cases of this description, it has lately been suggested by the learned Editor of the Medico-Chirurgical Review, that those in which the matter is restricted in a cavity by surrounding adhesions of the pleuræ, cannot in propriety be called cases of empyema. If I understand him aright, in a late criticism on a case published as one of empyema, in the 5th number of this Journal, he says, "We think it must be evident that the above was not a case of empyema, in the fair acceptation of the term, that is—a case in which pus was effused into the general cavity of the pleura. The gradual progress of the complaint,—the little comparative disturbance of the respiratory system,—the limited tumour,—the character of the discharge,—the auscultic indications,—and last, not least, the very successful issue of the case, all combine to prove that the pus and hydatids were confined in a restricted cavity: most feasibly between the pleuræ with surrounding adhesions of those membranes."

Now, in all humility, I would suggest to the learned Editor, that if we are to exclude from the list of cases of empyema those in which the purulent fluid is encysted by adhesions of the pleuræ, we shall dismiss most of those which are at present designated by that term: for example: is it not a very rare thing to see a case of chronic pleurisy terminating in a collection of purulent matter in the cavity of the chest, in which the fluid is not more or less encysted by adhesions of the surrounding pleuræ; and yet, who is there that would, for one moment, hesitate in applying the term empyema to such a case?

The different modes, indeed, in which this purulent accumulation may take place within the sac of the pleura, deserve a closer investigation than has hitherto been given to them. I have found, in post mortem examinations, the purulent matter only in the lower part of the cavity of the thorax, lying upon the diaphragm, whilst in every other part the pleuræ were closely united together. I have, also, in the same manner, seen the matter confined in the middle of the thorax by adhesions above and below; and, sometimes, I have met with the purulent matter only in the superior part of the cavity. In each of these modifications the disease is less severe, the symptoms less distressing, and the recovery more probable, than when the whole of one side of the thorax becomes filled with purulent effusion, and the whole lung is compressed to the smallest possible size.

ARTICLE XI.

Asperula Odorata in Dropsy.

We have received the following notice of the effects of this herb in dropsical affections, from our esteemed correspondent, Dr. Walker, of Huddersfield.

I have lately, (among other English dried herbs,) tried the asperula odorata, in dropsy, with great benefit, in some cases that had resisted the ordinary strong remedies. As it is likely, in a month or two, to be plentiful in our woods, I should wish to recommend it to the notice of your readers. The case in which I last used it, was one of ascites abdominalis, which certainly had resisted the digitalis, mercury, iodine, and other antiphlogistic remedies, and in which all the symptoms seemed to be going on, from bad to worse. A strong infusion or decoction of the asperula odorata, drunk to as much as half a pint to a pint daily, acted very decisively both on the kidnies and skin, and in a few weeks, reduced the swelling, and restored the man to a state of convalescence.

What share the woodruff had, I am not prepared to say, but the evidence appears to me of such a kind as to justify farther trials of its efficacy, and this can only be done by taking advantage of the ensuing spring to collect it. None of the writers on medical botany ascribe such a power to it, (as far as I have read.) The plant is, of course, described in his usual graphical manner, by Sir J. E. S. Smith, by Withering, &c. &c.

ARTICLE XII.

To the Editors of the Midland Medical and Surgical Reporter.

Malvern, Sept. 26th, 1829.

Gentlemen,—There has been a great demand for Seidlitz water, prepared by Mr. Towers, of Liverpool. Two bottles of his preparation were analyzed. Seidlitz water, according to the analysis of Bouillon-la-Grange, contains, principally, sulphate of magnesia. To detect magnesia, the preparation of Mr. Towers was boiled, and a solution of carbonate of potash poured on the hot solution of the Liverpool Seidlitz water. If there had been sulphate of magnesia contained in the water, the sulphuric acid would have combined with the potash, and the magnesia would have been deposited, but there was no milky appearance. The salts were crystallized, and sulphate of soda and muriate of soda were produced. The salts were then deprived of their water of crystallization, and a gummy substance appeared in the residuum. The soluble weight indicated two drams in solution in half a pint.

Mr. Doidge was directed to prepare Seidlitz water. Two drams of sulphate of magnesia, and one dram of muriate of soda, were impregnated with fixed air. Mr. Doidge's preparation was

equal in effect to the preparation at Liverpool, and containing no vegetable matter, is not liable to putrefaction on the escape of fixed air. The purity of the Malvern water gives an advantage in the preparation of mineral waters. The Seltzer waters at Paris and Malvern, have been preferred to the water from the spring at Seltzer, from having quite the same flavour, and being more effervescent. I am, Gentlemen,

Your's,

GEORGE COOK.

ARTICLE XIII.

A Summary of METEOROLOGICAL OBSERVATIONS, *at Hanley Green, three miles east of Malvern Wells, and at Malvern Wells, for the months of July, August, September, October, November, and December,* 1829, *at* 8 *a.m. and* 2 *p. m.*

BY JAMES LEWIS, SURGEON.

July.—From the 1st to the 15th of this month, the barometer varied from 29.12, the highest point, to 28.55; from that time it rose to 29.45, and continued between that and 29.20 until the end. The mean of the thermometer during the whole of this month, was 63°. The wind for the first ten days, was S. S. W. the prevailing winds for the remainder of the month, N. N. E. and occasionally S. E.; on the night of the 24th, very vivid short lightning from the N. and N. W. The weather, during the whole of this month, was showery, and very few fine days.

August.—The barometer, from the 1st to the 20th, stood at 29.4; from that time to the end, at 28.60. The thermometer, till the 18th, averaged 60°, from thence to the end, 58°. From the 1st to the 10th, it was five degrees lower at Malvern Wells than at Hanley Green. The wind continued, during the whole of this month, to shift into every point of the compass, and did not keep two days in the same quarter. The weather alternately fair and rainy, and occasionally heavy rain with violent winds, and very rarely two fine days together.

September.—The mean of the barometer for the first five days, was 29.50; to the 20th 28.60, and 29.50 to the end. The thermometer, to the 14th, was 58°, and 55° to the end; and during the greater part of this month, it stood two degrees higher at Malvern Wells than at Hanley Green. The wind, generally speaking, S. and S. W., and occasionally N. W. until the 24th, when it continued N. until the end. In this month, like the last, we had almost alternate fine and rainy days, scarcely two days the same; and in the course of the three months, a great quantity of rain has fallen, with high winds, and very cold and cheerless for the season.

October.—The variation of the barometer during the whole of this month, was slight, being from 29.80, the highest, to 29.10, the lowest point. The mean of the thermometer was generally

48°. From the 1st to 14th, the wind was N. N. W. when S. S. W. winds prevailed during the remainder of the month. The weather mostly cloudy and showery, with but few fine days.

November commenced with a few fair days, but the remainder of the month was mostly humid and foggy. The barometer varied for the first ten days, from 29.80 to 29.10, afterwards it rose to 30.40; the mean for the remainder of the month being 29.60. The thermometer varied from 40° to 47° until the 17th, when it fell to 32°, then gradually rising to its former altitude. The wind was mostly S. S. W. with a few days of north-easterly winds.

December opened with humid, foggy, and very oppressive weather, which continued almost throughout the whole of the month; the barometrical mean for the first ten days, was 29.40, it then rose to 30.10; the mean, for the remainder, was 29.50. The thermometer ranging from 36° to 40°, until the 20th, when it fell to 30°, and the nights generally frosty. The wind, for the first three days, S. S. E., afterwards N. N. E. till the end, snow falling more or less for the last ten days.

ARTICLE XIV.

PAROCHIAL RETURNS of Births, Marriages, and Burials, that have been registered in the several parishes of the City and Suburbs of Worcester, including those of the several congregations who dissent from the Established Church, between the 1st of October, 1829, and the 1st of January, 1830.

Baptisms, 255; Marriages, 212; Burials, 154.

NOTICES AND ACKNOWLEDGEMENTS.

MR. AVERILL, of Cheltenham, is preparing for Publication, a *Third* Edition of his treatise on OPERATIVE SURGERY.

MR. W. R. RUSSEL WILTON, of Gloucester, has just published a MEDICAL CASE-BOOK, which we recommend to those who are anxious to record their cases with ease and accuracy.

Communications will appear in the Eighth Number, which will be published on the 1st of May, from Dr. Burne, London; Dr. Williamson, Leeds; Dr. Darwall, Birmingham; Dr. Walker, Huddersfield; Dr. Holbrook and Dr. M'c Cabe, Cheltenham; Dr. Cubitt, Kidderminster; Mr. Addison, Malvern; and Mr. Averill, Cheltenham.

All Letters and Communications, addressed, free of expense, (under cover,) to the Editors, at the office of the Worcester Journal, will receive immediate attention.

THE MIDLAND

Medical & Surgical Reporter,

AND

TOPOGRAPHICAL AND STATISTICAL JOURNAL.

HOMO, NATURÆ MINISTER ET INTERPRES, TANTUM FACIT ET INTELLIGIT, QUANTUM, DE NATURÆ ORDINE, RE VEL MENTE OBSERVAVERIT; NEC AMPLIUS SCIT, AUT POTEST.—BACON, NOVUM ORGANUM.

No. VIII. MAY, 1830.

OBSERVATIONS ON ENGLISH HOSPITALS.

BY J. K. WALKER, M. D., HUDDERSFIELD.

[CONTINUED FROM PAGE 234, VOL. I.]

THE Leicester Infirmary, which is situate at the southern extremity of the town, was erected by public munificence in the year 1771. Though honourable mention might be made of several individuals who co-operated in this noble project, yet it is to Dr. Watts that the praise is mainly due, of having first called the attention of the county to the expediency of such a charity, which now constitutes one of its proudest ornaments. From a deficiency of earlier documents, it is difficult to compute the probable expense originally incurred in the erection of this infirmary; yet such was, and ever has been, the liberality of this charitable county, that unlike some other institutions, this charity has never been compelled to close its doors for lack of the requisite support. There are few infirmaries in the kingdom which have not required alteration from time to time, and not without considerable expense, and some loss, which might have been avoided by a prudent foresight. The economy of these institutions, indeed, was a subject, till lately, but indifferently understood; and the discoveries of science have unfolded to us many important improvements in the mode of warming and ventilation, which have occasioned, in some instances, a very heavy accession of expenditure. This has been the case with the Leicester infirmary, and especially for the last ten years, during which, there is scarcely a report that does not present an important item in the article of alterations and repairs. The extent of ground attached to this institution, was five acres. The number of wards has been gradually increased, and in addition to the

larger wards, smaller ones have been provided, a desideratum in general with our earlier institutions. At present, in the infirmary alone, there are accommodations for more than 70 patients, exclusive of the fever wards. The amount of donations and legacies since the foundation, falls little short of £20,000, and the average annual expense is about £2,500. The Lunatic asylum was established in 1781-2. The patients of the asylum are supplied with all necessary sustenance from the infirmary, and the funds of the asylum are answerable to those of the infirmary, for the payment of a certain sum weekly, for each patient so sustained. To these two excellent institutions, a third was added in the year 1819, for the reception of cases of contagious fever, and the number of such cases that have since been admitted, fully attests the utility of this department. The mode of introducing warm or cold air into the wards, corresponds with that adopted at the Derby infirmary, and the regulations similar to those in use at other institutions. Among other means of recruiting the revenues of these institutions, the collections at charity sermons have proved a never-failing resource. *In one year*, 1825, the report states the sum of £1,244, as having been collected at the different places of worship.*

The following tabular view of admission, extracted from reports lying before me, will supersede the necessity of further detail.

	In-patients by Recommendation.	Accidents, and cases of Emergency.	Total of In-patients.	Out-patients by Recommendation.	Accidents, and cases of Emergency.	Total of Out-patients.	Annual Subscriptions and Arrears.	Annual Expense.
1820-1,	592			1706			1264	2265
1824-5,	615	48	663	1213	173	1386	1520	2726
1825-6,	1063	115	1178	1654	297	1951	2010	4650
1827-8,	774	60	834	1299	165	1464	1240	3277
1828-9,	704	50	754	1512	160	1672		

The number of annual subscribers in 1827, was 619, of which 184 were in the town, and 435 in the country; and £216 from 90 parishes. The excess of patients and expenditure in the year 1825-6, arises from a change of the usual period of dating the reports, June 1st to the 1st January, thereby comprising a return for a year and a half; and near £600 is to be deducted for repairs, alterations, &c., and for erecting the new building at the

* At Burton Lazars, in this county, formerly stood the *chief* of the Lazar houses in England, founded by a general collection throughout the kingdom, in 1135, in the reign of King Stephen. The founders were probably influenced by the peculiar properties of a spring near it, the waters of which are fetid and saline, and proved, no doubt, of considerable efficacy to the leprous fraternity. They still retain their character in the neighbourhood, for their salutary influence in certain classes of cutaneous complaints.

west end. In the last year's report, I find no account of the annual subscriptions, or the annual expense. The number of in-patients cured, from the commencement to June 1821, was 13,744; and of out-patients, 31,625.

	LUNATIC ASYLUM PATIENTS.				*FEVER PATIENTS.*		
	Remaining in the house.	Admitted since.	Total.	Discharged.	Admitted.	Discharged cured.	Died.
1820-1,	15	34	49	34	No Report.		
1824-5,	13	50	63	49	110	93	17
1825-6,	14	55	69	76	220	208	26
1827-8,	12	39	51	37	147	128	19

Though some important alterations were made for the accommodation of an increased number of lunatic patients, in 1815, and better regulations enacted for the welfare of the institution and comfort of its inmates, yet it is to be lamented that so numerous a class of unhappy objects should be so inadequately provided for. Much, very much, remains to be done. Of about one hundred insane persons, which appears by the returns made under a late Act of Parliament, to be the number of pauper lunatics in the town and county of Leicester, the existing institution is scarcely equal to the accommodation of one-half; and for that truly pitiable description of persons, the *incurably insane*, there is no provision. It is to be hoped that these facts will awaken the attention of the nobility and gentry of this county, and lead to the formation of some general and comprehensive plan, under the authority of the Act of Parliament, similar to that adopted in Bedfordshire, in Nottinghamshire, and in some other counties.*

* Vide papers ordered to be printed by the governors of the infirmary, Nov. 17th, 1815. In the report of the committee, the following admirable sentiments will be read with interest. "In thus proposing to confide the treatment of the patients to the medical superintendents of the infirmary, rather than to seek the kind offices of those who may have devoted themselves exclusively to this particular species of medical practice, your committee will be found to follow the dictates of an enlightened wisdom, which has happily been developed in our times. Medicine is now extending her empire over diseases more immediately connected with the mind, as well as those by which the body is primarily and principally affected. Nor is she left without her encouraging hopes, that she shall at length be permitted to explore that dark region, the brain, which has hitherto too generally been withholden from her view, and presented to less enlightened and less scientific eyes. Fact and experience, which alone can furnish philosophy with her materials, will, if the proposal of your committee be adopted, be committed to those most competent to profit by them; and thus insanity, as it is hoped by competent judges, will at length be found to have her ascertained laws, and to be susceptible of counteraction or mitigation, with little less success than other diseases. To the important mass of fact, observation and intelligence, collected from various sources, which must form the ground-work of scientific and systematic treatment, in the most afflictive, interesting and pitiable, of all maladies, it will be your wish that the Leicester lunatic asylum should contribute its just and full portion."

The rules of the Leicester infirmary, resemble in their tendency those adopted at other institutions; and the talents of the medical officers is such as to have deservedly acquired the confidence of the subscribers, and of the patients committed to their charge. The right of voting at elections is limited in the following manner:

To benefactors of £50 or more, at one time.

To individual subscribers of two guineas or more, annually.

To the chief magistrate of any body corporate; and to the precedent partner of any firm subscribing five guineas or more, annually.

To the physicians, surgeons and chaplain, for the time being.

I have already alluded to the Taunton and North Devon infirmary. It seems that similar charitable institutions exist in most considerable towns in the west of England. At Bridgewater, where the population is little more than 7,000, there is a small hospital, which admits no more than 12 in-patients; and the number of out-patients seldom exceeds 100, to whom advice is given and medicine dispensed, twice a week. There is a commodious house and garden, and the funds have been lately benefited by some considerable bequests. At Barnstaple, too, in consequence of the distance from the county town being too great for any participation of the benefits, it was resolved to set on foot a subscription for the establishment of an hospital, upon a small scale, for the accommodation of the northern parts of the county, and though some opposition was manifested in the onset, donations to the amount of £2,600, besides annual subscriptions, at present amounting to £460 a year, were soon collected. The objects of the subscribers was, to provide an establishment sufficient to accommodate 20 beds, and to enlarge the building hereafter, as the wants of the district might require. Small institutions of this kind have proved of the highest benefit, especially in manufacturing districts, where accidents are frequent. There are two of this kind in this part of Yorkshire, at Halifax and at Bradford. The first of these admitted 57 in-patients last year, principally accidents; and the last was erected at Bradford at an expense of £3,500, including the purchase of the ground and some adjoining buildings, and promises to prove a lasting blessing to that populous district.

The infirmary at Bedford was erected in 1803, *exclusively* for the benefit of the poor of that county, and not, as the great majority of infirmaries are, open to the poor of all counties.* The extent of ground is about three acres, and the number of wards originally was 10, and number of beds 48. The capital of the charity has been increased since the enlargement of the house, by donations and legacies sufficient to purchase £2,000 stock, in the 3 per cent. consols.

* The grandfather of the present Mr. Whitbread, left handsome legacies for building and endowing alms houses, and towards the erection of a county infirmary.

Capital in August, 1829, ...	£22,800
Ditto in ditto, 1825, ...	20,800
Increase of capital in August, 1829, over that in August, 1825, ...	2,000

Within the same period, the amount of annual subscriptions has been increased in the following ratio.

	£.	s.	d.
Subscriptions in the year 1829, ...	1,382	3	0
Ditto in 1825, ...	955	0	0
Increase in the last four years, ...	427	3	0

At the general annual meeting of the governors of this institution, held in August last, a series of recommendations was presented to the governors by Dr. Thackeray, (to whom the sole care of the medical department of this hospital has so long been committed,) the whole of which were adopted, with the thanks of the governors for his benevolent exertions, and the munificent contributions which he offered for carrying the same into effect. Dr. Thackeray, in his excellent letter, states to the governors, "the very imperfect condition of the original building, both in its medical and domestic arrangements, has been remarked and regretted by many competent judges of the essential requisites of an infirmary. The want of baths, of a sufficient number of sleeping rooms for in-patients, of waiting rooms for out-patients, and of rooms for a surgery, library, museum, &c. in the medical department; and of suitable rooms, offices and conveniences, as bed rooms for pupils, nurses and servants; brewhouse, laundry, pantries, back kitchen, coal and beer cellars, (as all these offices were altogether wanting in the original building, or from their smallness inadequate to their purpose,) and other minor, though necessary appendages, to a house in the domestic department, warrants my observations."

Thanks, however, to the public munificence, these great defects are now remedied. The extent of the means supplied, and the mode and objects of their application, may be thus summarily detailed.

First,	£.	s.	d.
Contributions to the enlargement of the house,	6,294	10	5
Deduct the whole building account discharged,	5,700	0	10
There remains a surplus, ...	594	9	4
Secondly,			
The profits arising from the sale of fancy work at the Ladies' Bazaar, ...	504	1	0

This sum, at the special desire of these benefactresses, is to be applied exclusively to the furnishing of the new rooms, wards, &c. of the house; and a portion of it has already been *applied for that purpose, in the fitting up of* 15 *additional beds for patients.*

Among other measures adopted at the suggestion of Dr, Thackeray, the following are most important; the formation of a general medical library to the infirmary; the institution of a pension fund for the officers and servants of the establishment, after a certain period of active and meritorious services; and lastly, the opening of the institution to the sick and necessitous poor of all counties and all nations, as soon as £2,000 shall have been contributed by out-county benefactors, and sixty guineas a year by out-county subscribers. In times like the present, when the poor are often compelled to emigrate in quest of employment, a common interest demands of all counties a reciprocity of accommodation and relief, for them under sickness, and the condition on which this boon is offered, will, it is hoped, be eagerly embraced by the neighbouring counties.* The total of in-patients in the annual report before me, is less than 300 for the past year, and of out-patients about 700: of course when the measures above described come into full operation, the sphere of usefulness of this institution will be most materially enlarged.

The Suffolk general hospital was erected at Bury St. Edmunds, (so remarkable for the salubrity of its climate, as to gain it the distinguished appellation of the Montpellier of England,) in the year 1825-6. The size of this hospital is sufficiently spacious for the present wants of this county, and the support it has hitherto met with, is a satisfactory earnest of still further exertions, should the cause of charity call for it. The annual subscriptions amount to more than £1,000, and the number of beds near 30. Considering the short time which has elapsed since the commencement of this institution, it is a great point to have secured a permanent fund of more than £3,000, which, there is reason to hope, will receive further addition. This, indeed, is the more necessary, as in the report now before me, (1828,) it appears that the expenses of that year amounted to £1407, while the annual subscriptions and dividends produced only £1,189. Upon comparing the disbursements of the present, with those of the past year, it appears that they have been less in all the articles, excepting those of wages and house expenses; but the increase of these is

* Vide Dr. Thackeray's letter. The Dr. very justly observes, that the annals of most *general* hospitals record many noble contributions, from benefactors having no local connection with them; whilst those of restricted or mere local infirmaries, exhibit, as might be expected, but few instances (because there exists no claim,) of such munificent patronage. It often happens that the county town is not centrally situated, and parishes are sometimes situated widely from their own county infirmary. There are several parishes in Bedfordshire, whose poor, no doubt, will be relieved out of their own county, whenever an infirmary is established at Aylesbury, for the county of Buckingham; while on the other hand, there are places in the latter county which, by their proximity, will be more conveniently relieved at the Bedford infirmary. The whole of this admirable letter deserves to be written in letters of gold.

to be accounted for by the very considerable increase of in-patients, which is a proof of the extended benefits of the charity.

Patients	In.	Out.	Total.
Admitted in the year 1826, ...	116	316	432
Admitted in the year 1827, ...	162	425	587
Admitted in the year 1828, ...	203	452	655
Cured in the last year, ...	89	228	317
Relieved, ...	57	90	147
Incurable, ...	18	6	24
Dead, ...	2	22	24
Irregular, ...	12	40	52
Remaining on the books, Jan. 1, 1829,	25	66	91
	203	452	655

The report also alludes to the very large number of serious accidents to which immediate relief has been afforded. The total of admissions from the commencement, is 1674. The number of medical officers consists of one physician, three surgeons, and three consulting surgeons.

It was in 1824, that a meeting was held at Chichester, for the purpose of considering the expediency of establishing a general infirmary for the western part of Sussex, and eastern part of Hampshire. It was the unanimous opinion of the meeting, that this district was fully capable of supporting such a charity, and the increasing prosperity and population, rendered such an institution peculiarly desirable, especially as the particular form and extent of the county was such, as to render the establishment of a similar charity at Brighton inadequate to meet the wants of its entire population. It was therefore decided, that as the city of Chichester possessed peculiar advantages as the site of such an institution, the infirmary should be built there, and be denominated "The West Sussex, East Hampshire, and Chichester General Infirmary and Dispensary." To the exertions of Dr. Forbes* is mainly due the successful result of this laudable undertaking, and the best thanks of the meeting were most deservedly given to him, for his zeal in procuring plans and statements from hospitals in other towns, which proved of the highest utility in regulating the decision of the committee. The preference was given to a single infirmary, which has this advantage, that the ventilation is so much more complete and easy, and there is an open well-aired and well-lighted gallery for the patients to walk in. The extent of ground is three acres. The rooms are all heated by common fire places. The two fever wards are on the ground

* I have already acknowledged the great obligation I am under to Dr. Forbes, of Chichester, for the useful documents with which he was so kind as to furnished me, which have supplied so much useful information on the subject of hospitals.

floor, each for 5 or 6 beds, and 8 wards up stairs, for general purposes, 4 for men and 4 for women, arranged to hold from 16 to 20 beds on each side. There are separate sculleries, and nurses for the fever wards, but no separate kitchen. There is one pump-water and one rain-water cistern in the roof, at each end, communicating with all the sculleries, shop, &c. with boilers in ths upper floor, which supply all the baths and sculleries with hot water. The amount of donations in the first report exceeds £8,000. The building charges amount to £5,718, and there are sundries not included in the contract, which, along with the furniture, swell the total expenditure to £9,592. The return of patients, for the first year, is as follows:

In-patients.		*Out-patients.*	
Cured or relieved, ...	119	Cured or relieved, ...	308
Made out-patients, ...	11	Made in-patients, ...	27
Discharged at their own request,	10	Irregular, ...	14
Irregular, ...	2	Dead,...	30
Incapable of relief, ...	7	Remaining on the books, ...	189
Dead,...	3		
Remaining on the books, ...	29		
Total in-patients, ...	181	Total out-patients, ...	568

The infirmary recently erected at Stamford, was opened for the reception of patients on the 5th of August, 1828. The building is principally, though not purely, of the Gothic style of architecture, and consists of two stories. The lower one comprises entrance hall, physician and surgeons' room, dispensary, nurses' rooms, and two large wards in front, with kitchen, &c. at the back and in the centre. The upper one comprehends operation room, matron and servants' rooms, and four small wards. There are, therefore, six wards, which are capable of containing, according to the plan of the architect, 30 patients. Not more than 20 have, however, been admitted into the house, and it is quite evident that *not more than six in addition could be comfortably accommodated.* The larger wards at either end of the building are 27 feet long, 16 feet wide, and 12 feet high. In the upper wards, two are made to occupy the same space as one of the larger ones below. These, however, are of unequal size, the larger being twice the dimensions of the smaller. The beds are placed at a distance of 3ft. 6in. from each other, the frame-work, as in other hospitals, being composed of iron, and the mattresses of curled horse hair. There are no wards detached for the exclusive reception of fever cases, such being, by the rules of the infirmary, inadmissible. From the size and situation of the smaller wards, accommodation might, however, readily be contrived for a limited number of such cases, should circumstances make it desirable. The warming and ventilation differ in no respect from that of a common dwelling-house. The total expenditure incurred in purchasing land, and in the erection and furnishing of the building, exceeds £7,000, *for which sum*

accommodation is provided for only 26 *patients*, and inconveniences have already been felt, which, had timely foresight been exercised, *with such means*, would not have occurred. The out-patients are compelled to wait in the entrance, both for the purpose of seeing the attending physician, and receiving medicine, and the board room is situate at the top of the first stair case. At the period I am now writing, there has been no annual report yet published, a year not having elapsed since the opening of the institution. As regards the kind of cases prevalent in this part of the country, there is nothing peculiar, excepting the number of intermittent cases, which give way in general to the usual remedy, sulphate of quinine. Being an agricultural country without any manufactories, accidents are comparatively rare, and out of 500 patients, there appear to have been five fractures only.

The expediency of erecting a suitable building for the reception of a limited number of in-patients, in a manufacturing district like Huddersfield, where accidents from machinery, coal mines, and various other sources are so frequent, will be admitted by all. But though for the last 12 years the subject has been so constantly pressed upon the attention of the public, such has been from time to time the series of disasters to our commercial prospects, that prudence forbad such a step. The project, however, was on the eve of being realized but a few years ago, when that never to be forgotten crisis, which shook our commercial fabric to its very basis, suspended this, as well as many other schemes of benevolence. Enough, however, was done, to prove the will, as well as the ability of the district, to support such an institution. It is not the town alone, but its opulent environs, to the whole upper division of Agbrigg, that such institution may reasonably look for support; and the amount of the donations, nearly equal to £10,000, raised principally in this district, holds out the most encouraging prospects for the future. Some delay was experienced in selecting the site, and arranging the terms on which the land was to be held. It was eventually decided that it should be built on the west side of the town; of the two acres appropriated to this charity, one is to be held on a lease of 999 years, at 2d. per yard, per annum; and another at will, paying £5. per annum.* The terms of the advertisement to architects, inserted in the newspapers, required that the design

* It was about 12 years ago that I thought it my duty to invite the attention of the neighbourhood to the expediency of providing a suitable building for the reception of in-patients, (in a short topography of the town and neighbourhood.) Since that time, the same subject has been regularly brought before the subscribers, at each anniversary of the dispensary; and above a year ago, a pamphlet, comprising such arguments as occurred to me, was distributed amongst the subscribers. The success, however, of our attempt, was owing to the energetic exertions of Mr. Clay, of this place, who, by his unaided efforts, raised donations little short of £10,000 for this benevolent project.

should comprise accommodations for 40 beds, 10 of which were to be entered by a distinct entrance, should it be deemed expedient to establish a house of recovery, with all the requisite accommodations for the medical officers, &c. The plan of the building to be so contrived as to be capable of enlargement hereafter, without impairing the symmetry of the building, and so as to occasion the least possible expense. The extent of the ground, with other particulars, was stated, and the sum to be expended was not to exceed £4,000. It was required that each design should be accompanied with an estimate of the cost, to which the architect, if required, should bind himself, and that each plan should be on a scale of 10 feet to an inch. To the second and third best plans, two premiums of £20 and £10 were offered.

At the expiration of the period assigned for preparing the plans, &c. no less than 20 different plans were sent in by thirteen different architects, of which the major part were double. Under these circumstances, a committee of competent examiners were appointed to inspect the minutiæ of each plan, the interior arrangements, number, and size of wards, &c. They had three distinct institutions to combine under one roof, a dispensary, an infirmary, and a house of recovery. The first of these it was evidently desirable, should be as little connected as possible with the body of the building; and the last, it was indispensably necessary, should have no communication with the rest of the building. After a careful examination of the plans, that designed by Mr. Oates, the architect, was adopted, as combining all the advantages required by the advertisement. It is neither single nor double, but unites the principal advantages of both. The gallery, for the use of the convalescent patients, is 7 feet wide, and has four windows in each story, and is, in this respect, superior to a double infirmary which is lighted from above. The length of the frontage is 120 feet. There are 11 wards in the infirmary, and 4 in the house of recovery. The size of the former is as follows.

INFIRMARY WARDS.

	Chamber story.	ft. in.	ft. in.
1 ward,	... ...	13 0 by	12 6
1 ditto,	... ...	17 0 —	13 0
1 ditto,	... ...	17 5 —	15 0
1 ditto,	... ...	17 6 —	10 5
1 ditto,	... ...	18 0 —	15 0
2 ditto,	... ...	18 0 —	12 4
1 ditto,	... ...	21 3 —	17 6
2 ditto,	... .	11 0 —	9 0
	Ground floor.		
2 ditto,	... ...	11 0 —	9 0

The operating room is in the chamber story, and is lighted by a sky light, as well as two windows.

The fever wards at the north end, have a separate entrance, and are as follows.

	Chamber story.	ft. in.	ft. in.
1 ward,	... ...	16 6 —	13 0
1 ditto,	... ...	13 0 —	9 0
1 ditto,	. . ..	17 6 —	15 0
	Ground floor.		
1 ditto,	... ...	17 6 —	15 0

In the whole of these wards, there is accommodation for 53 patients, at the rate of 26 cubic yards per bed. It is proposed to admit no more than 20 in-patients at first, as was done originally in Leeds, and increase the number as the circumstances of the neighbourhood allow. The fever wards may hereafter be used for general purposes, with a trivial alteration, if required, and a separate house of recovery built behind the infirmary.

It was on Monday, the 24th of August last, that a public meeting was held at Carlisle, to consider the expediency of establishing a public infirmary for the county of Cumberland. The question of an infirmary had been adverted to on several occasions, at public meetings, within these few years, at Carlisle. But it was by the noble bequest of £1,000, by the late Mr. Parker, of Warwick Hall, that the first impulse was given to this benevolent project. It is not a little remarkable, that Cumberland and Westmoreland, counties which abound with almost every other species of charitable institution, should neither of them possess an infirmary for the reception of the sick poor. A public infirmary (says Dr. Barnes, of Carlisle, in an admirable appeal to the public, published by him on this subject,) is much wanted, not only for the sick poor of Carlisle, but also for the sick and poor inhabitants of Cumberland and Westmoreland, neither county having at present an institution of this kind. But as there is no town of consequence near the centre of these counties, a difference of opinion may arise with respect to the best situation for a general infirmary, which, if properly conducted, would be sufficient for both. Carlisle being the county town of Cumberland, and more populous than any other town in either Cumberland or Westmoreland, affords the best situation for an infirmary. The free and frequent communication which it has on all sides with the surrounding country, gives it great advantage. It seems that the benevolent inhabitants of Whitehaven have long had it in contemplation to establish an infirmary there, the distance from Carlisle being too great, in their opinion, to be benefited by an infirmary in that town. A claim, indeed, had been put in for Whitehaven, urged with some earnestness, as a preferable site to Carlisle for a county infirmary. It would be well and creditable to the inhabitants of Cumberland, (as Dr. Barnes observes,) if infirmaries could be erected at both places; but if one only can be accomplished, Carlisle has the advantage of a central situation, population, and wealth. He recommends that an infirmary on a

very small scale, should be attached to the Whitehaven dispensary, to which patients affected with acute diseases, or who have met with accidents requiring immediate aid, might be removed, while the less urgent cases might be received into the Carlisle infirmary.* It has long been the custom, in various parts of Cumberland, to send patients to the Edinburgh, Newcastle, and Dumfries infirmaries, all of which are at a greater distance than Whitehaven is from Carlisle. The same may be said with regard to Kendal; a small infirmary, or a few rooms attached to the dispensary there, for the reception of accidents and acute diseases, would be attended with incalculable advantages, and poor patients affected with diseases which do not prevent their removal to a distance, might be brought to Carlisle. The amount of donations is about £7,020. The scale of privileges to be adopted, is similar to those of other institutions. It is suggested, also, that farm servants, apprentices, and domestic servants, should be admitted under certain limitations, *and payment of a weekly sum for maintenance. A medical practitioner*, who writes in the Carlisle Journal, (Oct. 3d,) in discussing the proper regulation of such institution, makes one recommendation, which has at least the merit of novelty, though to me, and I doubt not to most of your readers, it will appear degrading even to name. His proposal is, to divide the town into districts, say 3 or 4, and appoint a surgeon to each, *with an allowance of* £12 *a year or so;* and let their prescriptions be made up at the infirmary, by the house apothecary—this, too, in the small town of Carlisle!! and yet this same writer mentions the allowance of unnecessary salaries as the most pernicious of all infirmary mal-practices.†

* The Bishop of Carlisle, to whom the honour of introducing this subject is due, stated, in the course of his address to the public meeting, "that in the county of Cumberland, the average cost of medicine, attendance, &c. falls far short of what it is in most other places. In looking at the annual statements of the Carlisle dispensary and house of recovery, he found the charge so low as 9d. per patient upon the average; whereas, in Kent, it is so high as 9s. 2d. At Whitehaven, the cost of medicine and other attendance, is not more than 1s. 9d.; and after adding the salaries, and other incidental charges of a similar kind, the average expense is 3s. 6d. a head only; from which he infers, that the annual outgoings of an infirmary in Cumberland, would not amount to any thing like so large a sum, as in many other parts of the kingdom."

† Dr. Barnes, from whose essay I have extracted the above remarks, enumerates the medical establishments already provided for the sick poor of Cumberland and Westmoreland, as follows:—Carlisle has a dispensary and fever house; about 3,000 patients are annually registered at the dispensary, and partake of its benefits. The fever house is confined to cases of infectious fever, of whom about 60 are admitted annually. At Whitehaven there are also a dispensary and fever house; to the former nearly 3,000 patients are annually admitted; to the latter, 18 patients have been admitted during the last year. At Kendal there is a dispensary and lying-in charity, from which between one and two thousand patients receive annually professional aid. Cockermouth has a dis-

This last remark, indeed, seems levelled against some particular charity known to the writer. In this part of the kingdom, however, the only stipendiary medical officer is the house surgeon, and far distant may the day be, when the medical officers of hospitals shall stand in need of any other incentive to a conscientious discharge of their duty, than that rich reward within their own breasts, which is better than the gains of avarice. The building committee have neglected no means of gleaning the requisite information, to enable them to come to a prudent decision on the size, plan, and probable expenditure of a building, suited to the circumstances of the place; and whenever their plans are matured, they will prove, I doubt not, creditable to the foresight of the committee, and calculated to meet the wants of the sick poor of the present and future generations.

The Carlisle infirmary is the last institution of the kind that has, as yet, been projected in England, and the time is not very distant, I hope, when other counties, of no greater population than Cumberland, will be induced to follow so laudable an example. It is not a little singular, that not one of our provincial infirmaries should yet have reached its centennial anniversary, and that of all our English counties, little more than half yet enjoy the blessings of a public hospital. Indeed, in point of number of objects relieved, it seems that the three counties of Middlesex, Lancashire, and Yorkshire, present a return of sick poor relieved by public bounty, exceeding that of all England beside.

I have now completed, imperfectly, indeed, but as fully as my documents would enable me, the task I undertook of communicating some sketch of English hospitals. It is quite evident that, in many respects, a considerable improvement in the construction of these edifices, has taken place within the present century, in the mode of airing and lighting the passages, the supply of baths, water closets, and in the domestic departments; and not the least of these improvements, is the provision for the classification of the patients, in the adoption of small wards, a desideratum which has been supplied in our older institutions, at a great loss, which might have been prevented. Examples of this are to be found in the Nottingham, Leicester, Worcester, and some others; while in the more modern ones, this has been attended to. The following hospitals, of a more recent date, are examples of this fact.

	Built.	No. of Wards.	No. of Beds.
Truro, ...	1799	5	25
Newcastle-under-line, ...	1815	12	45
Taunton, ...	1812	6	30
Bridgewater, ...	1820	5	12

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pensary; the surgeons of the town attend the poor gratis, and supply them with medicines, the expense of which is defrayed by subscription, so that neither a dispensary house nor an apothecary is required.

	Built.	No. of Wards.	No. of Beds.
Colchester, ...	1820	8	62
Bedford, ...	1803	10	48
Chichester, ...	1826	8	32
Huddersfield, ...	1829		

As the Manchester infirmary has just undergone some important alterations and additions, at an expense which, when complete, will amount to £10,000., the following statement of the present size of the wards, may not be unacceptable.

15 smaller wards, averaging		——	3 beds each.
	ft. in.	ft. in.	
1 ward, ...	18 0 by	13 0 —	5 ditto.
1 ditto, ...	23 0 —	16 0 —	6 ditto.
1 ditto, ...	25 0 —	18 6 —	7 ditto.
2 ditto, ...	29 0 —	18 6 —	8 ditto.
1 ditto, ...	39 0 —	18 6 —	11 ditto.
1 ditto, ...	39 0 —	18 6 —	12 ditto.
New Wards.			
2 ditto, ...	25 0 —	18 0 —	7 ditto.
4 ditto, ...	29 0 —	20 0 —	10 ditto.
2 ditto, ...	26 0 —	22 6 —	11 ditto.
2 ditto, ...	32 0 —	18 6 —	11 ditto.

There are no wards on the ground floor; the kitchen, scullery, laundry, wash-house, and other offices, are in the cellar. There are four water closets and two nurses' kitchens in each of the upper floors. The chapel is over the entrance hall, and the operation room is in the upper story. A patients' dining room in each story. A steam apparatus is used in the kitchen, and the laundry stove is heated by warm air. *The warming of the wards is by means of Rumford grates in common fire places.* The ventilation is effected in the old wards by holes over the doors, communicating with the passages, which are spacious. In the new wards there are flues built in the wall for that purpose, two in each of the larger wards, and one in the smaller wards, and an opening left in the upper part of the room, which opening is fitted up with a sliding box, which opens and closes at pleasure by means of pullies and rope. The whole of the interior is completed, but the stone casing for the front is left for a future time. The estimate for the casing was £2,500.

It would be a waste of time to go into a similar narrative of the various changes which other infirmaries have undergone, but they all teach a valuable lesson, that an original fault in a building, entails upon posterity an excess of expenditure, much of which, by a less rigid parsimony in the onset, would have been avoided.*

* It has been observed in your account of the Worcester infirmary, that formerly, for want of proper accommodation, the erysipelatous sores were apt to undergo a sort of *nosocomial deterioration*, as Dr. Young calls it; and the

But I have already made too serious inroads on your useful pages, by what, to some, may appear useless details relating to this subject. It would, otherwise, have been agreeable to me, to have detained your readers, by a brief review of the rules by which most of our English infirmaries are governed. And this, after all, perhaps, is not the least important part of the subject; for of what avail is the most perfectly contrived edifice, unless such rules and regulations are adopted for its government, as will effectually ensure to the sick poor, that relief which is the first, if not the only object, of all such institutions. If (as has been asserted,) the rules of some of our medical charities are such as to require revision, and in many cases considerable alteration, let the work be undertaken* in a right spirit, and not from party motives, or to gratify the ends of any individual. That there are abuses in some of our charities, I am not prepared to deny, but looking at the whole of our hospitals, the amount of patients admitted, and the number cured, I do contend, that in no part of the world, will the proportion of the latter to the former, be found so great as in our own country. This pre-eminence we may justly claim for the land of our dwelling and our love. She is great in the freedom of her institutions, in the triumphs of her literature, in the splendour of her conquests; but she is greatest of all in her charities. Far as she is from rendering back to the Giver of all good, an adequate portion of that which He has so liberally bestowed, and little as the responsibility of stewardship appears to have fastened itself on the consciences of many of her wealthy population, yet still the stream of her bounty has gladdened and fertilized many a desolate spot at home, and gone forth, like a mighty river, even to the ends of the earth.

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same phenomenon has been remarked in other hospitals. It is dissimilar in its action from that of common vitiated air from filth or defective ventilation, which rarely, if ever, produces the same upon a sore in the crowded dwellings of the poor. And even in the crowded wards of our hospitals, a certain epidemic state of the atmosphere seems essential to give it birth. The most important fact, however, for us to know is, that separation of the patients into smaller wards, aided by proper ventilation, is the most effectual step to prevent its influence.

* I will take the liberty of calling the attention of your readers to this important subject, at some future occasion.

ARTICLE II.

Two Cases of Stricture of the Large Intestines, about the point of the termination of the Sigmoid Flexure in the Rectum; with Observations.

BY JOHN BURNE, M. D.

Case I.—Scirrho-contraction of the Large Intestine.

A gentleman, between 45 and 50 years of age, of a sanguine and very irritable temperament, and accustomed to live well and keep late hours, consulted me in February, 1826, on account of some troublesome superficial small ulcers in the mouth, which had teased him for several weeks, and had resisted the remedial means employed. Accompanying these ulcerations, was a state of heat and dryness of the mouth and pharynx, with some little trouble in deglutition. The temperature of the body was increased and the surface dry, and the pulse was accelerated and rather tight; and the first hours of the night were passed restlessly, the bowels being habitually regular. The above assemblage of signs, except the regular state of the bowels, will be recognized as the frequent precursors of stricture of the œsophagus, which I thought it my duty to intimate to the patient, that he might be alive to such admonitions.

By the use of leeches to the side of the throat, and by saline aperients, the ulcers healed, and all the other signs abated in about ten or twelve days.

In November of the same year, and in February, 1827, I was again consulted by this gentleman, on account of some dyspeptic symptoms, which were soon relieved by medicine, his body being as usual, naturally and freely open every day. From this time, I saw nothing more of him for twelve months, when in February, 1828, he again applied to me, on account of his usual dyspeptic complaints, but with this difference, that his bowels, which had been exceedingly regular all his life, were now sluggish, and required the frequent use of aperient medicine. On this occasion, I prescribed the comp. rhubarb pill of the Ed. ph. which proved effectual, and together with other treatment, gave him so much relief, that again I heard nothing of him for five months, when in July, 1828, he called upon me, and complained much of flatulence, acidity, and irregularity of the bowels. He was this time also very much relieved by aperients, but the action of these medicines was not so certain as formerly; and when the bowels were not freely moved, he suffered much from fulness.

His symptoms, although relieved, returned whenever he relaxed in attention to the bowels; on which account, together with the favourable season of the year, I advised him to go to Cheltenham. The Cheltenham waters acted like a charm; the bowels emptied themselves freely every morning, and his appetite and digestion became exceedingly good, as did his spirits and general

health; but immediately after he had quitted Cheltenham, the irregularity of the bowels returned, and with it all the dyspeptic troubles; and as from these he suffered considerably, and from his age and sallow face, and obstinate complaints, there was reason to apprehend that organic disease was establishing itself, I proposed a consultation, and the friends fixed upon the late Dr. Armstrong.

The Doctor and myself examined the abdomen very minutely, as I had done before, without being able to discover any indication of disease: pressure was borne in every part, and the only uneasiness complained of, except griping, was a pain which sometimes shot through the upper part of the sacrum. Blood was directed to be abstracted from this part by cupping, and, in addition, an alterative aperient plan was agreed upon; but these measures not being followed by amendment, it was proposed to ascertain if any cause of obstruction existed in the rectum. On first introducing the finger into the gut, no trace of disease was discoverable, but by passing it forward as far as was practicable, I met with a hard immovable tumour the size of an egg, and further backwards and upwards, I reached with the tip of my finger, a contraction of the bowel, having an opening not larger than a swan quill, surrounded by a hard knotty structure, which altogether exactly resembled a scirrhous os uteri.

The case was now made out, and I recalled to mind the tendency to stricture of the œsophagus, manifested upwards of two years before.

Saline aperients diluted in imitation of Cheltenham water, were now prescribed, and succeeded very well in evacuating the bowels.

A mechanical obstruction having been discovered, it was deemed proper to take the opinion of a surgeon as to the practicability of giving relief by a bougie or otherwise, and the late Mr. Wadd was called in. On his first examination, Mr. Wadd did not reach the disease, but when after several days, he satisfied himself of its existence and malignant nature, he gave it as his opinion that surgery could do nothing. Saline aperients were laid aside and castor oil substituted, which, although it excited the action of the intestinal canal, did not procure evacuations: the muscular efforts of the intestines were most violent, and gave rise to excessive spasmodic pain: the intestines could be seen and felt to move under the integuments, making ineffectual attempts to force the feculent matter through the stricture, and the agony was so great during these spasms, that the patient desired death. The spasms were much allayed by large doses of laudanum, but were, nevertheless, succeeded by a sharp attack of inflammation, which did not subside for several days; and when the patient had struggled through this danger, it was only to encounter similar torture at some early period. Extreme difficulty was always found in procuring evacuations, and being driven, as we were, to extremity, further surgical advice was desired, in order to consider, a second time, the practicability of

facilitating the evacuation of the colon. With this view, Mr. Copeland, Mr. Brodie, and Sir Astley Cooper, were consulted in succession, and all concurred with Mr. Wadd on the hopelessness of the case, and the inexpediency of surgical interference. Mr. Brodie and Sir Astley Cooper did make some attempts to pass a bougie, but did not feel justified in persevering, lest they should rupture the intestine.

Injections and saline aperients were had recourse to unremittingly with partial success; the violent spasms returned frequently, and the most severe were followed by inflammation. The violent contractions of the intestine constituting the spasms, were always more or less relieved by laudanum; but opium, in this form, made the mouth and tongue dry, and was followed by head-ache and langour. From these ill effects, the liquor opii sedativus was free, but the most efficacious preparation was the acetate of morphium in the form of a pill, and in the dose of from $\frac{1}{8}$ to the $\frac{1}{2}$ of a grain, repeated as circumstances required. The last preparation was found a most valuable medicine, and never failed to mitigate the excruciating pain and other sufferings of the patient's last days.

In this way the patient lived on, passing scarcely any feculent matter, and suffering pain and inflammation by turns till the 20th of February, 1829, on which day the spasms returned violently about six o'clock in the morning, and soon after seven the patient felt a sudden and dreadful pain dart from the left side across the belly above the navel, which he compared to the discharge of a pistol. Quickly afterwards the belly became tense, the respiration difficult, and the powers of life depressed. It at once occurred to me that the colon had given way above the stricture, which I stated to the friends, and prepared them to expect the rapid dissolution which took place in the course of eleven hours.

Sectio cadaveris.—The abdomen being opened, a large quantity of feculent matter, of soft consistence, was seen lying among the intestines and upon the mesentery, and was found to proceed from a tranverse rupture of the colon, about an inch long, at the spot from whence the violent pain darted. The whole of the colon was filled with feculent matter of the same kind; the sigmoid flexure was seen stretching across the brim of the pelvis to the right side, when it turned quickly upon itself and terminated in the diseased portion, which was situated directly under the promontory of the sacrum. The diseased part was about the size of an egg, and consisted of a scirrhous degeneration of those structures of the intestine situated between the mucous and peritoneal coats. The aperture of communication between the colon and the rectum through the diseased part, scarcely equalled the size of a swan quill, and had a curved direction, which proved the correctness of the opinion, that force used in attempts to pass a bougie would be likely to rupture the bowel. The lower opening looked backwards and downwards to the hollow of the sacrum, and its margin was knotted and irregular as has been described.

There were adhesions of the sigmoid flexure to the small intestines, and the scirrhous mass was adherent to the sacrum.

Case II.—Annular Contraction of the large Intestine.

Of the second case, which was an annular stricture, I regret that I am only able to present a few particulars, not having the means of obtaining the early history. It occurred in a female pauper in Covent Garden workhouse, who had been admitted three weeks before her death, in a state of extreme emaciation, and with a remarkably distended flatulent abdomen; she passed scarcely any feculent matter during the three weeks, and was constantly vomiting, so that nothing except brandy and water and similar beverage, could in any way be retained on the stomach.

Sectio cadaveris.—Before the abdomen was opened, traces of the convolutions of the intestines were evident, by corresponding elevations of the integuments: these convolutions were found to be distended with gas, and the colon was full throughout of soft feculent matter; and at the termination of the sigmoid flexure in the rectum, was a circular contraction of the bowel forming the annular stricture. There was no thickening or disease about the part, and the contraction had the appearance of the bowel tied with a ligature, except that there were neither folds nor puckering.

Observations.—The ulcerations, the heat of the mouth and trouble in deglutition, detailed in the history of the first case, shewed a condition of constitution prone to morbid action, which having first fixed on a part of the digestive canal, determined that canal to be the eventual seat of disease.

A very prominent circumstance in the dissection of both these cases, was the soft consistence of the feculent matter, particularly when it is remembered that, from the slow accumulation, the feculent matter had been lying in the colon for several weeks in the first case, and in all probability for several months in the second. This is the more curious, because in ordinary constipation of the bowels, the feculent matter becomes hard and knotty in eight and forty hours, sometimes in twenty-four, and continues so till it is evacuated; hence it occurred to me that the soft consistence above alluded to, was probably one of those remarkable provisions which nature is often observed to make against disease, and if this is the case, the same soft condition of the retained fœces may be expected in all cases of stricture. Experience, however, does not afford me a sufficient authority of facts to come safely to a conclusion on this point, but the probability which I have expressed is much strengthened by two cases, one of which occurred in private practice, and was mentioned to me by Mr. ———, a pupil of Guy's hospital, who witnessed the dissection; and the other in a patient in the same hospital, in both of which the accumulated fæces were in the same soft state. I do not know that this circumstance has been hitherto noticed,

nor can I find in the works upon stricture of the rectum, any evidence that bears satisfactorily on the question.

Did the fæces undergo the same change as in ordinary cases of constipation, there would be no possibility of evacuating them through a stricture, and the irritations and accumulations would be quickly and uniformly fatal; whereas the reverse is a matter of daily observation. The sympathies by which this usual change in the fæces retained in the colon is prevented, are the more remarkable, because they influence only the part of the large intestines above the stricture, for the soft feculent matter which gradually oozes through the contractions into the gut below, very soon becomes solid and figured, as I had an opportunity of witnessing in the first case, in which it was not uncommon for solid figured pieces to come away, although all above the stricture was quite soft, as seen by dissection. This last fact is also mentioned by Mr. White.*

The soft feculent matter was also of a most healthy character, being homogeneous, and containing an abundance of good bile; from which it may be concluded that digestion was perfect, notwithstanding many of the symptoms said to be indicative of indigestion were urgent, as flatulence, fulness, acidity, and eructations; whence it is apparent that the sufferings usually referred to the stomach, may arise from another cause than disorder of that organ.

In both instances the patients died from the mechanical obstruction: in the one the disease was not malignant, in the other the malignancy had not come into operation, the patient having died before the destructive effects of cancer had taken place, as ulcerations, sloughing, discharge, and sympathetic irritations and fever; the subject for consideration, therefore, was the treatment of the obstruction; the observations on which refer only to the first case.

The eminent surgeons consulted were unanimous as to the inexpediency of attempts to force a passage by the bougie, owing to the situation as well as to the malignancy of the disease; in which opinion all must concur, who have witnessed the torture that attends the use of a bougie in scirrhous disease of the rectum, and which is not recompensed by any benefit; this stricture not admitting of dilatation, the effect of the bougie is to bruise and hasten ulceration, or increase it if present. Although the most desirable means by way of operation, was the introduction of a hollow tube through the stricture to facilitate the passage of injections, yet this was found impracticable, the distance of the strictured part from the anus being too great to admit of the finger as a guide, and without this, the capacious and yielding rectum left no chance of effecting the passage of such an instrument. In this dilemma, and in my frequent consultations with Mr. Wadd, I suggested for discussion the propriety of making an

* Observations on Stricture of the Rectum, 3d edition, page 37.

artificial anus, which, although he discouraged, I cannot but think might be attempted under favourable circumstances as regards the operation, and urgent circumstances as regards the prolongation of the patient's life.

It may be said, that between the two evils of a stricture and an artificial anus, it is difficult to choose, to which I assent generally; but when the patient's life must fall a sacrifice to the mechanical obstruction, and when the prolonging his life for a few months only is of great consequence to his family, the suggestion is worthy the consideration of surgeons; for in the first case, the malignancy of the disease would not have destroyed life for months in all probability; and in the second case, there being simply an annular contraction, life would have been preserved by an artificial anus, which would have permitted the regular evacuation of the bowels. To render the operation justifiable, the colon should be empty, and the means of attaining this end are the object of the medical treatment of stricture generally.

All are agreed that the aperients which must be necessarily given, should be of a mild character, and the recommendations of authors who have treated on the subject, are limited to castor oil, senna, and sulphur; thus leaving unnoticed saline aperients, which, as will presently be seen, are the most efficacious. These medicines, castor oil, senna and sulphur, although desirable from their mild qualities, are very uncertain and ineffectual in cases of stricture: it is true they promote a moderate, and so far, a proper peristaltic action of the intestines, but as they do not render the fæces watery, this action is not followed by sufficient evacuation, and therefore not by sufficient relief. Sulphur is objectionable on other grounds; it has been known to form into balls when taken in large doses, and in this way may add to the mischief. The same objection applies also to magnesia, which has been found accumulated in a large quantity above the stricture.

While the subject of the first case was at Cheltenham and taking the waters, the evacuations were so thin that the colon emptied itself effectually every day, and under these favourable circumstances the patient lost all complaint and improved surprisingly. This first suggested to me the use of saline aperients, which were given in the form of Seidlitz powders and of sulphate of magnesia, in a very diluted solution; and they were found to operate much more pleasantly and efficiently than other aperients. These, however, and the Cheltenham water itself drunk in town, were by no means so certain in their operation as the waters drunk at Cheltenham, owing, no doubt, to the want of auxiliary circumstances which are known to favour the operation of mineral waters, as change of scene, absence from the fatigue and anxiety of business, early rising, and exercise. On one occasion, when castor oil was substituted for salts, its effect was exceedingly injurious; it duly excited the action of the intestines, but as it

did not render the fœces watery, they could not pass the stricture freely, and the consequence was violent spasmodic pain and vomiting.

Drastic and heating purgatives are very properly objected to in all cases of stricture; nevertheless, the distress of the patient on one occasion was so great for the want of evacuations, that a person of very great practical attainments was induced to propose the administrations of croton oil, the propriety of which was much discussed, on account of its irritating properties and violent action; but its employment being much urged by the proposer on the score of its unrivalled purgative power in other cases, it was exhibited in the dose of one drop, which was repeated in the space of half an hour. The effect, as was anticipated, was nearly fatal; it produced most violent contractions of the intestines, and spasmodic pains, with a distressing heat along the whole alimentary canal, and constant and urgent, but ineffectual efforts, to go to stool, the scanty evacuation consisting of nothing more than a bloody secretion from the rectum, the product of excessive irritation.* The violent action of the intestines led one to fear a rupture of the colon, of which the sequel of the case proved there was great danger.

In the medical treatment of stricture of the large intestine, then, saline aperients are the best and most efficacious; and where the disease does not admit of relief by surgical interference, the physician would best consult the interest of his patient, by urging him to reside at Cheltenham or Leamington, and by the aid of warm bathing and of drinking the waters regularly, to avail himself of the means which will most certainly mitigate his sufferings and prolong his life.

ARTICLE III.

Collections, with Remarks, upon Diabetes.

BY JONAS MALDEN, M. D., WORCESTER.

[CONTINUED FROM PAGE 387, VOL. I.]

In the year 1797, a work appeared, entitled, "An account of two cases of the Diabetes Mellitus, with remarks, as they arose during the progress of the cure; to which are added a general view of the nature of the disease and its appropriate treatment, including observations on some diseases depending on Stomach affection, and a detail of the communications received on the subject, since the dispersion of the notes on the first case. By

* As from the vast accumulation of feculent matter found on dissection, it was impossible that any particle of the croton oil could have reached the rectum, the excessive irritations must have been the result of sympathy, which may go far to explain the phenomenon of the inflammation of the rectum which occurs in cases of poisoning from arsenic.

John Rollo, M. D. Surgeon-General, Royal Artillery. 2 vols. 8vo."

The first case is that of Captain Meredith, of the Royal Artillery, æt. 34. He came under Dr. Rollo's care on the 16th of October, 1796, at which time he voided about 12 quarts of urine in 24 hours. This urine was of a light straw colour, had no urinous smell, but gave out somewhat of a violet odour, and was *very sweet to the taste.* He had *excessive thirst*, and drank during the day seven or eight quarts. His tongue was whitish but moist; and he spat a frothy saliva of a sweetish taste. His appetite for food was variable, sometimes unusually keen, particularly during the night. His face was flushed; his skin dry, but not unusually warm, and his pulse was 84 in the minute. He was frequently sick, and threw up a viscid matter, bitterish and rather sweet. After eating he had pain in his stomach, which usually lasted half an hour. He had constant pain in the region of the kidneys, extending forwards, but more particularly in the right, in which there seemed to be a greater fulness and tenderness to the touch. There was likewise a retraction of the testicle, with a weakness, sense of coldness, and at night an œdematous swelling of the leg on the same side. He also complained of a great pain and tenderness of the great toe. He felt also a singular fluttering sensation in his belly, extending from the situation of the kidneys. He was regular in his bowels, though sometimes inclined to costiveness. His stools were of a greenish colour, and had no unpleasant smell. His gums were reddish, and appeared as if affected by mercury. His teeth felt to him loose. There was a fulness about the eyes, with a turbid yellowish cast, and he had slight occasional head-ache.

His diet consisted of animal and vegetable food; and he drank from a pint to a bottle of port daily. His other drink was toast and water. He used exercise both in the way of riding and walking; but he could not walk above two miles without much fatigue.

At this time, 36 ounces, troy weight, of his urine, analyzed by Mr. Cruickshank, yielded by evaporation three ounces and one drachm of saccharine extract, of the appearance of molasses, but thicker. According to this proportion, his whole urine for a day would have yielded twenty-nine ounces, troy weight. By treating some of this extract with the nitrous acid, Mr. Cruickshank procured oxalic acid.

Two portions of blood, about four ounces each, were taken from his arm. These, in appearance, exactly resembled what is described by Dr. Dobson,* excepting that the serum did not impart a sensibly sweet taste. The crassamentum of the first cup had a slight buffy coat; the crassamentum of the second had more.

A portion of blood from a healthy person drawn on the same day, was placed in the same room and in the same circumstances

* See Midland Medical and Surgical Reporter, vol. i., p. 376.

with one of the portions of diabetic blood. In two days the diabetic blood assumed a cheesy appearance on the surface, and the whole mass became dry and resinous, without having undergone any apparent putrefactive process. At the end of sixteen days it remained in the same state; whereas the healthy blood exhibited evident marks of great putrefaction in four days, and it became necessary to throw it away on the seventh.

When this patient came under the care of Dr. Rollo, his disease had lasted seven months. During that time he had taken some remedies, the chief of which were Peruvian Bark,* and alum.† He had wasted considerably; for, in October, 1794, he weighed sixteen stones and eight pounds; and in November, 1796, he weighed only eleven stones and eight pounds, giving a loss of five stones. For six months preceding the attack of diabetes, he was often sick, and vomited at least two or three times a week; and he frequently vomited up different things unaltered, which he had eaten several days before. The taste of them was generally sour. He always ate heartily, and drank freely, but not intemperately. He was fond of high-seasoned and fat dishes. He had had two attacks of gout, and, at other times, two fits of cholic. Dr. Rollo's indications of cure were the following:—1st.—To destroy a supposed sugar-making process going on in the stomach. 2nd.—To promote a healthy assimilation.‡ 3rd.—To prevent a supposed increase of absorption from the surface.§ 4th.—To diminish the increased action, and to change the imagined derangement of the kidneys.‖

With these intentions, the following plan of treatment was resolved upon.

1st.—His diet to consist principally of animal food,¶ in moderation; fat and rancid old meat to be preferred.

2nd.—For drink, he was allowed daily four quarts of water which had been boiled, and in which was dissolved a drachm of the *kali sulphuratum.*

3rd.—His skin to be anointed with hog's lard.—Flannel to be worn next the skin, and the gentlest exercise only permitted, but confinement preferred.

4th.—A draught to be taken at bed-time, consisting of 25 drops of tartarized antimonial wine, and 25 of *tincture of opium*, and the quantities to be gradually increased.

5th.—An ulceration, about the size of half-a-crown, was directed to be produced, and maintained externally, immediately opposite to each kidney.

* See Dr. Ferriar's case, Midland Reporter, vol. i., p. 381.

† See Notice of Mead and Dover, ibidem, p. 374.

‡ Dobson and others.

§ Mead and others.

‖ Baillie.

¶ Home. See former paper in this Journal.

This treatment was begun on the 19th of October, and on the 21st, some changes had taken place; his urine was only six quarts in the 24 hours, and he drank three quarts of the sulphuretted water. The urine was darker coloured, cloudy, and more urinous in odour. His skin was moist; his stools large and offensive. On the supposition that the kali sulphuratum might be a diuretic, it was resolved to try hepatized ammonia, on the suggestion of Mr. Cruickshank, principally with the view of diminishing the action of the stomach.* He was directed to take five drops of it in each half pint tumbler of water that he drank. The first day he took thirty-five drops in all, which in the evening produced sickness and vomiting, giddiness and drowsiness. He was then directed to omit the hepatized ammonia for one day, and then to begin with two drops to each tumbler of water.

On the 4th of November, his drink was two pints, his urine two quarts, not sweet, and it deposited a red sandy sediment. On the 5th, the nightly opiate was discontinued; and on the 8th, he left off anointing with the hog's lard. Before the 14th, the disease returned slightly. This Dr. Rollo attributed chiefly to irregularities in diet; but it is not improbable that the omission of the opiate had something to do with it. On the 14th, an entire abstinence from vegetable matter was enjoined; nothing was allowed approaching nearer to it than milk; and even this was ordered to be left off and strong beef tea substituted, should the disease not disappear. His urine soon again became higher coloured, and its smell and taste urinous. He continued his plan with tolerable regularity, and by the 18th of December, his disease seemed to be nearly subdued; he was therefore permitted to eat daily half a pound of bread, and to take more exercise. On the 30th he had continued free from disease; he was in high spirits and rapidly gaining flesh. His urine was only two pints in 24 hours, and perfectly urinous. He now weighed thirteen stones and one pound, shewing an increase of a stone and a half since the end of November.

After this time he continued free from complaints. He took both walking and riding exercise freely. He ate bread, potatoes, and other vegetables, without inconvenience. His appetite was good and natural, and his bowels regular. His urine continued natural in quantity and quality, and on evaporation yielded the residue of healthy urine, salt and bitter, without sweetness or tenacity. About the middle of March, Captain Meredith returned in health to the duties of his station.

Dr. Rollo's second case is that of a General Officer, æt. 57. His urine amounted to ten or twelve pints in the 24 hours; it was sweet, and he had the other symptoms common to diabetes. His disease had lasted nearly three years when he came under the

* This medicine is prepared by causing a stream of sulphuretted hydrogen gas to pass through the aq. ammoniæ puræ, until the alkali is saturated. The gas is obtained by the solution of sulphur of iron in muriatic acid.

care of Dr. Rollo, in the beginning of January, 1797. Nearly he same plan of treatment was directed here as in the case of the Captain. In a short time his thirst was diminished, and his urine reduced to two, three, or four pints in the twenty-four hours, and without sweetness. At the end of February he had regained flesh and strength. He now resolved to return to his residence at Portsmouth. On parting from Dr. Rollo he was told that for preventing the return of his disorder, every thing depended on himself.

He arrived at Portsmouth on the 27th of February, but was attacked with a bowel complaint from having eaten something improper on the road the day before. On the 6th of March he had a similar attack after eating beet-root. On the 9th he had the sanction of a physician to eat what he pleased and to drink wine. His disease was soon re-produced.

From these two cases Dr. Rollo concludes.

1st.—That the diabetes mellitus is a disease of the *stomach*, proceeding from some morbid changes in the natural powers of *digestion* and *assimilation*.

2nd.—That the kidneys and other parts of the system, as the head and skin, are affected *secondarily*, and generally by sympathy, as well as by a peculiar stimulus.

3rd.—That the stomach affection consists in an increased action and secretion, with vitiation of the gastric fluid, and probably on too active a state of the lacteal absorbents.

4th.—That the cure of the disease is accomplished by regimen and medicines preventing the formation of sugar, and diminishing the increased action of the stomach.

5th.—That confinement, an entire absence from every species of vegetable matter, a diet solely of animal food, with emetics, hepatized ammonia, and narcotics, comprehend the principal means to be employed.

6th.—That the success of the treatment in a great measure establishes the five preceding inferences.

7th,—That the saccharine matter of the disease is *formed in the stomach*, and chiefly from vegetable matter, as has been shewn by the immediate effects produced by the abstinence from vegetable matter, and the use of animal food solely.

8th.—That *ascescency* is predominant in diabetic stomachs, which continues even some time after the entire abstinence from vegetable matter, and after the formation of sugar; and that while such *ascescency* remains, the disposition to the disease may be supposed to continue.

9th.—That the saccharine matter may be removed in three days, and by avoiding vegetable matter, will not be re-produced; but we are not yet able to state accurately, when the disease and the disposition to it can be finally removed.

10th.—That there are two circumstances to be attended to in this disease, which we may separate in the progress of the treatment. As it has been shewn that though the formation of sugar

was prevented, yet the increased action of the stomach remained, maintaining the defect of assimilation and preventing nutrition.

11th.—That the lungs and skin have no connexion with the production of the disease.

12th.—That the quantity of urine is probably in proportion to the quantity of fluids taken in, and has but little dependence on the absorption of fluids, from the surface of either skin or lungs.

13th.—That though the disease has been shewn to consist in an increased morbid action of the stomach, and probably too great a secretion, with vitiation, of the gastric juice, yet the peculiar or specific condition of either, as forming the disease, is acknowledged to lie in obscurity, and must remain so till the physiology of healthy digestion be properly explained and established.

14th.—That the first case had only been of seven or eight months' duration when the treatment commenced; but the second case had continued upwards of three years. The age of the one was 34; of the other 57; circumstances which constituted material differences, though they seemed not to create corresponding difficulties in the treatment, so far as the direct removal of the complaint was concerned. They may, however, retard, in the one instance, the entire restoration of health.

15th.—That in both cases occasional irregularities occurred in the course of treatment, and were respectively followed by re-productions of the disease.

16th and lastly, from both cases we may warrant the general conclusion, that the diabetes mellitus is so far understood as to be successfully cured.

The foregoing appears to be a fair analysis of Dr. Rollo's practice and opinions. The remainder of the volume is made up of communications from others to himself, arising from the dispersion of his notes upon Captain Meredith's case, and contain nothing of importance except as far as regards the origin of the disease; which in one case, (Dr. Falconer's,) is attributed to excessive indulgence in spruce beer; in another, (Dr. Cleghorn's,) to hard work during recovery from fever; and in another (Dr. Gerard's,) to disordered digestion as indicated by pyrosis, and excessive perspirations previous to the attack of diabetes.

There is also a communication from Mr. Abernethy, who found the serum of the blood turbid in diabetes; and observed that sugar taken into the stomach increased the sweetness of the urine.

It is not necessary to continue the survey of medical opinions on this singular malady any further, since the principles of Dr. Rollo in its treatment, have been for the most part acted upon by the profession ever since the appearance of his publication. The success has been very variable, in most cases producing a temporary change for the better, but in many no permanent benefit. These failures ought not, however, to disparage the treatment, since a great number of them may be fairly attributed

to the broken down state of the general health of which diabetes mellitus is not an unusual concomitant.

There are some conclusions, however, at which I think I have fairly arrived, both by the survey of the opinions of others, and of the results of my own practice. 1st. That there is in this disease a defective *animalization* of vegetable ingesta, with augmented hunger and thirst. 2nd. That there is most rapid absorption of fluid from the primæ viæ. 3rd. That as long as the urine is saccharine, the blood differs from its natural state in having turbid serum, and long resisting the putrefactive process: and lastly, that in all the well authenticated cases of confirmed cures, both animal diet and *opium* were used.

The question here occurs whether the establishment of the physiological relation subsisting between the secretion of urine and healthy blood, is calculated to throw any light upon the relation subsisting between the renal secretion and the blood in diabetes.

The first thing that strikes the physiologist in the contemplation of the kidneys, is their high vascularity, the considerable size of their arteries and veins, and the direct manner in which the main trunks of the former come off from the great descending aorta. The rapidity, therefore, of the circulation of the blood in these organs, must be very great at all times, and, in particular, when the secretion from them is very copious. It was owing to their not duly considering the force and rapidity of the circulation of the blood in the kidneys, that many medical philosophers, both ancient and modern, suspected that there was a nearer communication between the stomach and the urinary bladder, than that of the circulation. They were led into this opinion from the great expedition with which cold water, when drunk to excess, passes off by the bladder, and from the similarity of the urine, when produced in this hasty manner, to the material that was drunk. Dr. Darwin was induced to admit, what has been before alluded to,* a retrograde action of the absorbents to explain this phenomenon. The assumption was entirely gratuitous and unsupported even by the result of his own experiments.

The urine, then, whatever be its quantity or its quality, is a direct secretion from arterial blood, which, therefore, must contain its ingredients or the elements of them.

If this opinion be incontrovertible, then, I think, upon analyzing healthy urine, we shall see for what reason the kidneys, in proportion to their bulk, are so largely and directly supplied with *arterial* blood; for we shall find that this most important and vital excretion, is chiefly effected by the oxygenation, in the kidneys, of the acidifiable bases in the blood, producing a fluid essentially acid from one, (the blood,) in which a pure alkali, soda,) predominates.

* See my former paper on this subject.

The substances that are always found in urine, are the following: water, *carbonic acid*, *phosphoric acid*, *uric acid*, *phosphate* of lime, *phosphate* of ammonia, *phosphate* of soda, *phosphate* of magnesia, common salt, *sulphate* of soda, albumen, and *urea*.

The existence of free acid in recently voided urine, is easily demonstrated, by its property of reddening vegetable blues; and whenever this natural acidity is diminished, the urine has a tendency to deposit the earthy phosphates.

It is extraordinary that the vital chemistry of the kidney should be enabled to elaborate such materials from the blood, and produce so speedily a fluid so different from it in character: and this astonishes the more when we find so little trace of the materials of this heterogenous product in the blood itself, which consists of a large proportion of water containing albumen, fibrin, red globules, muriates of potassa and soda, some muco-extractive matter, free soda, phosphate of soda and some earthy phosphates, with a trace of oxide of iron. Still from this blood so composed is healthy urine secreted; and this blood has sensible properties very different from those of diabetic blood, in which latter albumen is deficient, as I have ascertained by repeated experiments; and this may be one reason why it so unreadily takes on the putrefactive process. Would not an inquirer a priori expect that urine separated from such arterial blood, would be very different from urine secerned from blood more completely animalized? and his surprize that sugar should be the product under such circumstances, would be diminished upon calling to mind that the kidneys in their healthy function are *acidifiers*, combining oxygen in various proportions with acidifiable bases; for the analogy between the vegetable acids and sugar is so close, that a very trifling difference in the proportion of their elements will reciprocally convert them; as is instanced in the formation of oxalic acid from sugar; an acid, indeed, occasionally found as a morbid product of urine in combination with lime, making the mulberry calculus. To illustrate this view of the probable action of the kidneys in diabetes, I will subjoin a tabular view of the proportions of some of the ternary acids as compared with sugar.

	CARBON.	OXYGEN.	HYDROGEN.
Sugar,	42.47	50.63	6.90
Mucous acid,	33.69	62.67	3.62
Oxalic acid,	26.57	70.69	2.74
Tartaric acid,	24.05	69.32	6.63
Citric acid,	33.81	59.86	6.33
Acetic acid,	50.22	44.15	5.63

From this it appears that the kidneys in diabetes are not driven from their natural function so far as at first sight appears; for although the urine contain sugar instead of an abundance of acids, still the kidneys have only eliminated deleterious carbon from the blood, by combining it with a due proportion of oxygen,

and the excess of carbon in the blood requiring this effort on the part of the kidneys, is the natural consequence of its containing vegetable matter imperfectly animalized.

It is worthy of remark, as connected with this view of the subject, that the secreting organs most frequently found diseased in connexion with diabetes, are the *lungs*, the *liver*,* and the *skin*; all of which separate carbon largely from the blood, and of the functions of which the action of the kidneys is frequently vicarious in other diseases as well as in diabetes. The quantity of carbon separated by the kidneys in this disease, must be very great, since nearly 30 ounces, troy weight, of saccharine matter have been voided with the urine in 24 hours.

The following case is one in which the disease was associated with greatly disorganized lungs, and dry skin.

Edward Wilkes, a labourer, æt. 60, was admitted into the Worcester infirmary, January 31st, 1829, in a very weak emaciated state. He complained of pain in the loins and weakness in his limbs. His skin was harsh, dry, and branny, with a papular eruption upon it. His breathing was short and quick, and he had slight cough without expectoration. His pulse was 90 in a minute, small and weak; his tongue was white and slimy, his mouth clammy; appetite for food, and thirst very great; bowels rather bound. He voided eight quarts of pale straw-coloured urine in 24 hours, which tasted extremely sweet. He said he attributed his complaints to hard work, poor living, and exposure to wet and cold.

Upon strict animal diet; opium and calomel at night; cupping the loins, and occasional doses of rhubarb, there was some mitigation of the diabetes produced: but his cough gradually became worse, his weakness and emaciation extreme, and on the 16th of March he suddenly began spitting large quantities of fetid pus, and on the 19th he died, completely exhausted.

Sectio cadaveris, eight hours after death. Thorax.—Both lungs adherent to the pleura, particularly at their upper parts, and remarkably dark-coloured. They collapsed very little on opening the chest. They were both converted into clusters of abscesses filled with pus, which broke down with the slightest pressure of the finger, and communicated with the bronchia. The heart was small, empty, and firmly contracted. The kidneys were of an extremely dark purple colour, and very vascular. The liver also was much gorged with dark-coloured blood. The gall bladder was distended with healthy bile. The mucous membrane of the stomach was more minutely injected with arterial blood than usual; but this organ was in all other respects natural in appearance.

Where diabetes is associated with such formidable lesion of a vital organ as was found in this case, little can be expected from the aid of medical treatment, particularly when the patient is of

* See the opinion of Mead in my former paper on this subject.

advanced age; but in younger persons who do not shew any marks of impaired health, further than may be fairly attributed to the peculiar state of the digestive organs attendant upon the disease, the treatment may be conducted upon principles that will lead to success.

The first thing is to remove altogether vegetable diet.

2nd.—To allay the morbid irritation of the stomach by *opium* in sufficient doses, and occasional blisters to the epigastrium; and sometimes by leeches, if there be tenderness on pressure. *This treatment likewise allays the thirst.*

3rd.—To give sulphur in small doses so as to preserve a regular state of the bowels; to increase the determination to the skin, and to convey into the blood a portion of a mineral base to be oxygenated in the kidneys, and thus to diminish their tendency to form sugar. That sulphur passes into the blood and pervades the system, is proved by the cutaneous odour of those who are taking it, as well as by the fact that a hydro-sulphuret of silver is formed upon watch cases and silver coins in the pockets of persons on a course of sulphur.

4th.—Should there be much uneasiness referred to the loins, they should be occasionally cupped; or a discharge may be produced from them by means of issues.

The following case was treated upon the above plan.

Anne Singles, æt. 37, was admitted into the Worcester infirmary May 30th, 1829. She has great thirst; voracious appetite; red slimy tongue, with a white fur in the middle; spongy gums rather sore. Bowels regular; *skin moist.* She perspires freely. Pulse 60, very feeble. She is greatly emaciated. She first noticed that she made more urine than natural about six weeks before, but had been ill ever since Christmas. Her complaint began with diarrhœa, tumid abdomen, and œdema of the ankles. She attributed her complaints to working hard in the open air in severely cold weather, and being at the same time badly off for food.

She was ordered to live on *animal food only*, and to drink *milk, and water.* 31st. The whole quantity of urine in the 24 hours, amounts to 17 pints, of a pale amber colour, perfectly limpid, without sediment, and of exceedingly sweet taste. A quart of this urine yielded, by evaporation, three ounces of saccharine matter, of the consistence of thick treacle.

June 4th. drink 6 pints; urine 13 pints. 5th. drink 6½ pints; urine 15 pints. 6th. drink 5 pints; urine 9 pints.

7th. drink 5½ pints; urine 14 pints. Complains much of thirst; bowels costive. Sumat sulphur, præcip. alb. coch. parv. i. bis indies.

8th. drink 7 pints; urine 20 pints. 9th. drink 6 pints; urine 10 pints. She appears more emaciated than when she was admitted.

10th. drink 6 pints; urine 20 pints. Bowels open. She complains of pain in the loins. Cucurb. cruent. lumbis appli-

cand. ut fluant sanguinis ℥x. Sumat *pil. saponis c. opio*, gr. v. omni nocte horâ somni.

11th. drink $3\frac{1}{2}$ pints; urine 7 pints. 12th. drink $6\frac{1}{2}$ pints; urine $10\frac{1}{2}$ pints. Bowels loose. Sumat sulphur. semel indies solummodò.

13th. drink $6\frac{1}{2}$ pints; urine $7\frac{1}{2}$ pints. 14th. drink $6\frac{1}{2}$ pints; urine $12\frac{1}{2}$ pints. Says that her thirst is less, and that she feels better. Augeatur dosis pilularum ad gr. x. omni nocte horâ somni.

15th. drink 6 pints; urine 8 pints. 16th. drink 6 pints; urine 11 pints. One quart of urine yielded $2\frac{1}{4}$ oz. of saccharine matter.

17th. drink 6 pints; urine 8 pints. 18th. drink 6 pints; urine $10\frac{1}{2}$.

19th. drink 7 pints; urine $11\frac{1}{2}$ pints. Complains of pain in the bowels. Augeatur dosis pilularum ad gr. xv.

21st. drink 7 pints; urine 11 pints. 22nd. drink 5 pints; urine $7\frac{1}{2}$ pints. 23rd. drink 5 pints; urine 8 pints. 24th. drink 5 pints; urine 7 pints.

25th. drink 4 pints; urine 7 pints. Has pain in her bowels. Urine still sweet to the taste, but of a more urinous smell. The saccharine residuum from a quart was $1\frac{3}{4}$ oz. Augeatur dosis pilularum ad gr. xx. et sumat sulphur alternis diebus.

26th. drink $4\frac{1}{2}$ pints; urine $7\frac{1}{2}$ pints. 27th. drink 5 pints; urine 7 pints. Says she is less hungry, and that her thirst is considerably diminished. She complains of no pain, and her spirits and appearance are improved.

28th. drink 5 pints; urine 7 pints. 29th. drink 5 pints; urine 6 pints. The saccharine residuum from a quart of urine was $1\frac{1}{2}$ oz.

30th. drink $5\frac{1}{2}$ pints; urine $7\frac{1}{2}$ pints.

July 1st. drink 6 pints; urine $8\frac{1}{2}$ pints. 2nd. drink 6 pints; urine 9 pints. 3rd. drink 6 pints; urine 7 pints. 4th. drink 6 pints; urine 8 pints. 5th. drink 5 pints; urine 7 pints. 6th. drink 5 pints; urine 7 pints.

7th. drink 5 pints; urine $6\frac{1}{2}$ pints. The urine now was higher coloured, and of strong urinous odour; had still a sweetish taste, but mixed with a saltish one. A sweet residuum similar in appearance to that before obtained, was procured by evaporating a quart. This residuum weighed only 1 oz. shewing a diminution of 2 oz. since her admission.

8th. drink 5 pints; urine 7 pints. 9th. drink 5 pints; urine 7 pints. 10th. drink 5 pints; urine 7 pints.

She now became impatient of the restraint of the infirmary, and expressed a wish to return to her family; she had gained flesh and strength the last fortnight. Her thirst was greatly diminished, and her appetite for food moderate. She was desired to keep to her animal diet, and to continue her medicines. She was made an out-patient.

July 25th. drink 4 pints; urine $4\frac{1}{2}$ pints; not sweet.

August 1st. drink 4½ pints; urine 5 pints. She still gains flesh.

8th. drink 5 pints; urine 8 pints. Thirst and bulimia returned; has been obliged to eat a good deal of bread this last week, and some potatoes. The urine is sweet but saltish. Tongue clean and moist; skin moist; pulse 120, after walking to the infirmary, a distance of six miles. She was ordered to lose eight ounces of blood from the arm; to take pil. sapon. c. opio gr. xv. every night, and to take the following draught every morning. ℞ sulphuris loti. ʒss. liq. potassæ ♏ xx. aquæ font. ℥i. m. N. B.—The serum of the drawn blood was turbid and whitish, not sweet, but very insipid. The crassamentum had a slight siziness at the top; it slowly contracted to a small size, but did not cup. The blood examined on the fourth day was free from offensive odour, and the crassamentum was drying on the top.

15th. drink 5 pints; urine 7 pints. Thirst less; appetite less. Urine smells naturally, and tastes salt. She says she is weaker. Pulse 100, small. She says she is badly off for food, that she cannot therefore keep to a strict animal diet; yet she refuses to be made an in-patient again.

She did not make her appearance at the infirmary again until the 22nd of August.

22nd. drink 6 pints; urine 9 pints. She has not kept to rules. For the last fortnight she has left off all medicines, and returned to out-door labour. The thirst and hunger are great. The mouth clammy. She perspires freely at night. The skin is not dry nor harsh to the touch. The fauces are redder than natural. She complains of pain in the pit of the stomach, and the epigastrium is tender. The urine is sweetish. Appr. emplast. lyttæ epigastrio. Perstet.

September 5th.—She has omitted to measure her drink and urine. The epigastrium is still tender; in other respects she is better. Appr. cucurb. cruentæ epigastrio ut fluant sang. ℥viij. Perstet.

12th. drink 5 pints; urine 7 pints. Urine still sweetish. Still living on mixed diet. The pain and tenderness of the stomach gone. Her appearance is much improved.

26th. drink 5 pints; urine 11 pints. Is not so well as at last report. Complains of griping pain in the bowels; night-sweats. Pulse 95, small; thirst great. She has not been able to procure meat enough; has eaten a large proportion of bread, and drunk sugar in her tea. Still she has not lost the flesh she had gained when she left the house.

October 10th.—She was again made in-patient on the 10th of October.

11th. drink 5 pints; urine 10½ pints. Urine sweet. One quart on evaporation yielded half an ounce of treacly matter, which had a strong urinous odour and taste, mixed with sweetness. Sumat opii gr. ij. omni nocte; and sulph. præcip. cochleare parvum omni aurorâ.

12th. drink 5 pints; urine 11 pints. 13th. drink 5 pints; urine 11 pints. Skin rather dry. ℞ pulv. ipecac. compos. gr. x. opii gr. i. M. sumat omni nocte.

14th. drink 5 pints; urine 11 pints. 15th. drink 5 pints; urine 11 pints. 16th. drink 5 pints; urine 9 pints. 17th. drink 5 pints; urine 9 pints. 18th to 24th. drink 5 pints; urine 7 pints. 25th. drink 4 pints; urine $5\frac{1}{2}$ pints.

27th. drink 4 pints; urine 5 pints. This urine had the urinous odour and taste, and yielded no sugar on evaporation.

29th. drink 4 pints; urine $12\frac{1}{2}$ pints. 30th. drink 5 pints; urine $14\frac{1}{2}$ pints. 31st. drink 5 pints; urine 14 pints. This urine was slightly sweet.

November 1st. drink 5 pints; urine 11 pints. 3rd. drink 5 pints; urine $8\frac{1}{2}$ pints. 4th. drink 4 pints; urine 6 pints. 5th. drink 4 pints; urine 6 pints. Quite natural.

7th. drink 4 pints; urine 6 pints. 10th. drink 4 pints; urine 5 pints. 15th. drink 4 pints; urine $4\frac{1}{2}$ pints. 17th. drink 4 pints; urine $4\frac{1}{2}$ pints. 18th. drink 4 pints; urine 4 pints. 19th. drink 4 pints; urine 4 pints. 20th. drink 4 pints; urine 4 pints. 21st. drink 4 pints; urine 4 pints. 22nd to 29th. drink 4 pints; urine 4 pints. Made out-patient, without complaint, except of occasional indigestion.

December 5th. drink 4 pints; urine 4 pints. Urine still natural.

February 6th. drink 4 pints; urine 4 pints. She says she has had no return of the diabetes, although she has resumed her usual diet and out-door work. She has gained flesh and strength, although she still complains of occasional indigestion.

I much regret that my professional engagements prevented my notes and experiments upon the preceding case being so frequent and minute as I could wish. But still the case is of value, since the plan proposed in the first instance was never deviated from, and notwithstanding the tediousness of the case and the variation of the symptoms partly owing to irregularities, against which it is impossible entirely to guard, the cure may be considered a complete one.

Dr. Lomax Bardsley's "Hospital facts and observations," a newly published work, has just fallen into my hands. In this work he has narrated six cases of diabetes treated with *animal diet*, *opium*, and the *warm bath*. The beneficial effects of this treatment were very great, but in *one* only was the sweetness of the urine entirely removed. As to the warm bath, it is clearly not applicable to cases in which the skin is moist; and dryness of the skin is not a symptom uniformly present. I do not think that any treatment uncombined with *animal diet*, and *opium* in effectual doses, likely to be successful; but for the reasons I have before stated, I strongly recommend the conjoint exhibition of sulphur.

The due conversion of our food into blood, and its subsequent adaptation to the repair of all the different structures of the body,

are phenomena so familiar, that they cease to excite our astonishment; and yet it is impossible to contemplate any thing more wonderful in the animal economy. That there is a failure of this power with regard to vegetable diet in diabetes, is sufficiently obvious; but so little is known of the different stages of the process of alimentation, that it is problematical in what stage the failure takes place.

Dr. Rollo considered the stomach as primarily affected, and the disease, in fact, to consist in a depravation of the gastric juice. The precedent and concomitant dyspepsia, the morbid appetite, and occasional gastrodynia, seem to favour this opinion: but, again, the facility with which the stomach digests large quantities of animal food in this disease, seems at variance with the supposition of any diminished power of the stomach. Besides, in cases in which the disease has lasted a long time, the stomach after death seldom exhibits any morbid appearances, an event to be expected where functional derangement has long continued. Yet, it may be urged, that the powers of the stomach to "transubstantiate"* being impaired, the defect would naturally shew itself first in the digestion of those articles of diet which require to be most changed: the conversion of vegetable diet into the substance of an animal body, being a much more extraordinary effort of vital power, than the transubstantiation of matter already animalized.

"All flesh is grass," says the quaint Sir Thomas Brown, "which is not only metaphorically but literally true; for all those creatures we behold, are but the herbs of the field digested into flesh in them, or more remotely *carnified* in ourselves. Nay, further, we are what we all abhor, *anthropophagi* and canibals, devourers not only of men but of ourselves; and that not in an allegory, but in positive truth; for all this mass of flesh which we behold, came in at our mouths; this frame we look upon, hath been upon our trenchers; in brief we have devoured ourselves."†

The same thought, in part, is expressed by the ingenious Howell. "I fell," he says, "to consider that the flesh which is daily dished upon our tables, is but concocted grass, which is *recarnified* in our stomachs, and transmitted to another flesh."‡

The first conversion of vegetable into animal matter, by animals purely graminivorous or herbiverous, is one of those perpetual miracles which seem likely to baffle the scrutiny of philosophers,

* For this phrase in this sense I am indebted, not to a Physiologist, but a poet.

"So down they sat
And to their viands fell; nor seemingly
The Angel, nor in mist, the common Gloss
Of Theologians; but with keen dispatch
Of real hunger, and concoctive heat
To transubstantiate."—*Paradise Lost*, b. 5, l. 433, and sequent.

† Religio Medici, part i. sect. 37.

‡ Letters from James Howell, Esq. to Sir S. C.—March 17, 1639.

for the origin of the nitrogen which enters largely into the composition of all animals, is in them searched for in vain.

To return to the main subject of this paper. The digestive powers of diabetics may therefore be equal to the easier task of transubstantiating animal diet, although the peculiar energy requisite for a similar change of vegetable diet may be deficient. At present it is not clear in which or how many of the links of the chain of alimentation the defect may be.

ARTICLE IV.

Introductory Lecture to a course of Lectures on Botany, delivered at the Birmingham School of Medicine and Surgery.

BY JOHN DARWALL, M. D.

Gentlemen,

BOTANY, as a branch of natural history, must always present matter of interest to the cultivators of science; to medical men it has also peculiar recommendations, from its immediate connection with their profession. Its importance as a branch of medical education, has been gradually more and more recognized as botany itself has advanced in extent, and as numerous and powerful remedies have been derived from the vegetable world.

Botany is divided into practical and physiological botany. The former comprehends the distinctions of plants by means of their external forms, and has become more difficult and more extensive in its application as new regions have been explored, new plants discovered, and more accurate relations recognized amidst the different classes of the vegetable world. But extensive, and even in some respects, interesting as practical botany is; for simple as it may appear, we derive additional pleasure from the contemplation of natural objects when we know their names and can describe them to others; they who exclusively attach themselves to it, do, in the language of De Candolle, change a lovely garden into a barren waste; they busy themselves with the dry bones and arid skeleton, regardless of the beauty of animated nature, and the admirable purposes which plants are the instruments of effecting. It is the physiology of vegetables which can alone make their distinctions important, for with this, the advantages they afford to man are most intimately connected. But it must also be remembered, that accurate deductions in physiology, can only be drawn from accurate investigation of structure, and that the more numerous the facts upon which an opinion rests, the greater is the chance that the opinion itself is correct.

The present lectures comprehend only the general physiology of plants, and that part of their structure which is necessary for the elucidation of their functions: but if you wish to be accurate physiologists, you must make farther investigations for your-

selves; you must watch plants in their progress from the seed to the perfect flower; observe their habits and the circumstances by which they are influenced, having your observation always awake to the phenomena that are continually passing in the animated world around you.

The facts which I shall lay before you, in the course of these lectures, will, I trust, give an additional stimulus to your diligence, as I shall endeavour to teach you what to observe, and how to draw your deductions. In the earlier lectures I shall explain the minute anatomy of vegetables, the various kinds of cells and vessels of which they are composed, and, as far as I can, explain, at the same time, the purposes for which they serve.

After having thus entered into the minute anatomy of plants, I shall pass to what may be called their general anatomy, or the structure of those parts, which are common to all plants, as the root, the stem, the pith, the leaves, etc. and, as in the former case, I shall explain their functions as I proceed. With these will necessarily be joined some account of the armature of plants, the down, hairs, bristles, thorns, etc. all of which appear to serve very important, though often different offices.

In the illustration of these parts, either drawings or actual specimens will be exhibited, as the natural objects themselves can be procured, or as they are large enough to be seen by the naked eye.

Having thus become acquainted with the structure of vegetables, you will be prepared to enter into the phenomena of germination and nutrition; the ascent and descent of the sap, and the nature of the various secretions; the influence which is exerted by the atmosphere and by light upon plants, and the influence which is reciprocally exerted by plants upon the atmosphere. The transpiration of plants will naturally follow, when we understand the circumstances attendant upon their nutrition; and lastly, their fecundation, and the various provisions which nature employs for their propagation, will be considered. Such, Gentlemen, is a general account of the course I am about to deliver.

In the present lecture I shall draw your attention to some of those analogies which exist between the animal and vegetable world, and endeavour to shew you in how many ways the study of botany is necessary to a complete knowledge of your profession, a profession I beg you at all times to remember, in which it is not enough merely to recognize the peculiarities and probable termination of disturbed health, if left to itself, but a profession which requires from you a knowledge of every fact and remedy which may enable you to combat or overcome disease.

Plants, like animals, are organized structures, and in this respect they both differ much more from the mineral world than they do from each other.

Many compound inorganic bodies that can be accurately analized by the chemist, can also be re-united by him. The component parts of water, for instance, are often separated in the form

of two aeriform bodies, which are easily, when brought together, made to re-unite in the form of water again. Mineral bodies, also, when they increase in size, increase simply by the juxta position of similar particles. Thus, for instance, a mass of alum exhibits throughout the same component parts; the same proportions of sulphuric acid and alumen are found in the minutest as in the largest quantity; there is neither a greater proportion of either body in the greater, nor a less proportion in the smaller mass. On the other hand, organized bodies are the production of nature only. They are built up by means which she can alone employ, and however minutely the chemist may have analyzed the composition of every fibre, he has never succeeded by artificial means in re-producing it. Dissolve alum, and you may recover it by evaporating the water in which it was dissolved. Burn phosphorus, and chemistry has means of recovering it; but destroy woody fibre, and no art has yet been suggested by which it can be restored.

Neither do organized beings increase by the simple addition of similar particles, but from substances the most heterogeneous, they form, by some secret processes, their own nutriment. You seek in vain, in the earth that surrounds a plumb tree, for the various substances that are found in the sap which ascends to the leaves, the juices which are found in the fruit, or the gums which exude from its bark. The elementary substances are alone discoverable, of which, in different proportions, all the substances in nature appear to be composed.

In this short sketch of the most apparent differences between organized bodies and those which are said not to be organized, the comparison is drawn between the most perfect of each; for there are organized beings apparently so incomplete or so minute, that our instruments cannot discover their structure, and which approach so nearly to the mineral world, that they cannot serve for objects of comparison. It may, indeed, be said, that they are not known; we cannot use them, therefore, in our reasonings.

As plants, then, as well as animals, are organized substances, and as they obtain nutriment by effecting changes upon the bodies which are presented to them for this purpose, we may expect to find much similarity of structure, and much resemblance in the means which are employed for effecting similar ends.

Accordingly, plants, like animals, exhibit vascular structure. Vessels are traceable from the roots to the leaves; and vessels of a different appearance, and serving different purposes, are traceable from the leaves, through the internal layer of the bark, to the roots.

As plants have vessels, so likewise they have a circulation. The sap rises in the spring through one set of vessels to the leaves, it undergoes some change in the leaves, and thence returns through the inner layer of the bark to form the nourishment of the plant, to afford a new layer to the wood, matter of increase to the fruit, and the various secretions which plants produce.

In the higher classes of animals, it is well known that blood undergoes a change in the lungs, which fits it for the nutriment of the body; in this respect, therefore, an analogy exists between the leaves of plants and the lungs of animals, and fancy, carrying men farther, has even termed the foliage the vegetable lungs. But the analogy is far too imperfect for such an appropriation of terms to be correct; we can only go to the fact, that, in both, certain changes are wrought; but plants will live without leaves; animals that have lungs cannot live without the constant performance of their functions. Another respect in which the vegetable resembles the animal world, is in the possession of irritability. The nature of this property is easily observable in the iris, or that dark membrane which forms the pupil. When a strong light shines upon the eye, the pupil contracts, and opens again when the light is withdrawn. In this case the irritability of the iris is stimulated by the light, and it contracts, and this phenomenon holds a very important part in the function of vision.

Vegetables exhibit this property in various organs. In the impatiens or noli me tangere; when the seed is quite ripe, the smallest touch causes the pod to burst and scatter its seeds abroad. In this manner a garden is generally stocked with this beautiful plant, for when once introduced it sows itself, and will be found in a few years in a very distant point from that in which it was first placed.

The manner in which the pollen is shed, is another instance of the possession of this property by vegetables. Before any plant will produce seeds, it is necessary that the pollen should be applied in a smaller or greater quantity to the stigma, or that part of the flower which forms the apex of the seed vessel. Now the pollen is inclosed in small sacs, the union of many of which forms the yellow part of the anther. It is, therefore, an object with nature to burst these sacs, which are in many plants so minute that they fall off the body of the anther like fine dust. In other cases, as in the common hazel nut, the sac seems to burst at once, and a thick cloud is evident upon the slightest blow being given to the tree. In the common nettle, the irritable nature of the stamen is peculiarly manifest, more especially, however, in dry seasons. The reason of which seems to be, that moisture is essential to the bursting of the pollen sac, and when this cannot be had, the anther, though quite ripe, will remain for a considerable time without any change. The anthers of the nettle, in the earlier periods of the flower, are bent down into the centre of the corolla, each anther closely touching two if not three others. But when, by the intervention of an insect, or any other means, the stamens are touched, the stamen, with its anther, suddenly unfolds, and is thrown in a straight line beyond the margin of the flower, so that when this has taken place with all the anthers and the stamens, the anthers, which had previously been in close contact, are at the farthest possible distance which the size of the flower will admit. In the jerk which thus occurs, the anther

sheds its pollen, and an opportunity is afforded for this body to meet with the stigma.

Sir James Edward Smith, very many years ago, pointed out a similar circumstance as occurring in the common barberry. In this case, the anthers lie back upon the petals, but upon the stamens being touched in a particular point, they spring up and strike the anthers against the pistil with considerable force. Here the application of the pollen from the anther is made directly, and not as in the nettle, through the medium of the air. Another instance of the irritable nature of plants is afforded by the verbascum pulverulentum, or great hoary mullein. If, when this flower is in full blossom, the stock be struck sharply with a stick, almost every flower will in a few minutes fall from the stem, leaving nothing but the calyx and the seed vessel.

One of the most striking examples, however, is exhibited in the apocynum androsæmifolium, or dog's bane, and which has been noticed in the very entertaining little volume, the Naturalist's Journal. The anthers, upon being touched by the proboscis of insects in their search after honey, suddenly contract, and hold fast the insect till it dies from exhaustion. As soon as this takes place, it relaxes, and the insect falls.

The dionæa muscipula is also destructive of insects, in consequence of a similar irritability in the end of its leaves, which contract upon the insect and destroy it quickly. In all the other cases we see an evident reason for the possession of irritability in the economy of the plant itself: in these last, it seems less manifest what purpose can be served. Both the dog's bane, however, and the dionæa muscipula, are American plants, and the destruction of the insect tribe, which even in this country is not contemptible, may there be a matter of considerable importance. We have reason to believe that plants may occasionally be useful in this respect, as other means are also employed for apparently the same end. In the silene armeria, or common catchfly, there is a space of nearly an inch long under every knot, covered with a very tenacious gum, in which insects are caught and destroyed in great numbers. Whether in these and other cases, any purposes are served in the plants themselves, seems at present not to be ascertained.

What has been termed the sleep of plants, is another mode in which their irritability is exhibited. The mimosa pudica, or sensitive plant, droops whenever it is placed in the dark, and when exposed to the light, a considerable time elapses before its leaves recover their expanded state. This appears to be entirely owing to the effect of light, for Dr. Darwin kept one of these plants for some hours after day-break in the dark, and to use his own expression, "its leaves and leaf stalks remained collapsed, as in its most profound sleep;" but withdrawing light is not the only means of producing the collapse of the sensitive plant, for a slight blow will, at any time, have the same effect, particularly if it be given on the foot stalks between the stem and the leaves. The

convolvulus is well known as a plant which exhibits the phenomenon of sleep. It folds in its petals every night, and, whenever the sky is clouded, contracts upon the anthers and stigma more and more tensely as the weather is more threatening. The common dandelion is peculiarly sensitive in this respect. If two plants be placed so as to receive the morning sun at different times, one much earlier than the other, that which receives it first will be unfolded completely, almost before the other shall have shewn any indication of exposing its flowers.

It is also irritalibity which causes the little scarlet pimpernel to close against rain, and has thus procured for it the name of the shepherd's weather glass; and to such an extent is the same property possessed by the arenaria rubra, or purple sandwort, that the blossom shuts up in a few minutes after it is plucked, although the instant previously, its petals had been widely expanded. From this circumstance, it is not easy to examine the flower.

Absorption is another property which vegetables possess in common with animals. The absorption here meant is a property of living beings, and must therefore be distinguished from imbibition, which is often possessed by inanimate matter. If a sponge be dipped in water, it imbibes the water, not by any action of life, but in consequence of peculiarity of texture. The same thing will take place, though to a less extent, if cloth or linen be thrown into water; a dried bladder also becomes flaccid in water, from imbibition of the fluid, and a consequent softening of its structure. In all these cases you will plainly see, that no action of life is performed; the substances which are thus acted upon by water, are entirely destitute of life. Absorption, however, is an action of a living part, by which it draws its nourishment from without or from within.

In animals, absorption is almost entirely practised from within; plants, on the contrary, more frequently absorb from without.

When an animal has taken food into the stomach, it is gradually dissolved, and conveyed from the stomach into the bowels, where it undergoes a farther change, and the portion which is fittest for the nutrition of the animal, is taken up, or absorbed by vessels appointed for the purpose, and through them it is conveyed into the blood. It is by absorption, also, that medicines, applied externally, act; thus, rhubarb, placed on an open wound, will sometimes affect the bowels, and the peculiar action of mercury is obtained by rubbing it in externally. Now plants receive their nutriment in a fluid state from without, and they absorb by the roots. The roots are provided with a peculiar apparatus for this purpose, which are called spongioles, and which shrink up almost instantly on the root being withdrawn from the earth, and again become visible on being immersed in water. There is no certain proof, however, that this may not be simple imbibition, dependent solely on the structure of the part. If, however, a bulb be placed in water, we soon find it shoot out and acquire

weight, which can only be accounted for by supposing that it has absorbed a portion of the water. But by experiment we can proceed yet farther. If the root of an annual be immersed in coloured water, it will absorb some of the colouring matter with the water, and the vessels may be traced for a greater or less distance into the stem of the plant. The same thing will happen if a branch of a succulent plant be cut off, and the cut end immersed in a coloured fluid. I have in this way traced vessels in the common elder, and in a young branch of the vine, taken when the sap is first rising, this phenomenon is still more easily to be observed. The only instance in which plants appear to absorb from within, happens in germination. It often occurs, that potatoes shoot in the bury, and the skin is found completely empty. In this case the mealy part of the tuber has afforded nutriment to the young shoots, by which it must have been absorbed. The same phenomenon takes place in the germination of grain, and if the early part of the process of malting were continued long enough, the young root and the plume, or ascending branch, would absorb the farina of the seed. The progress of this absorption is very easily traced in grain. The first part is the softening of the farina; this gradually becomes sweet, and passes into that state which in barley constitutes malt; it is then observed, as the shoots of the seed increase, to diminish in quantity, and at length, all that remains of the seed, is the skin which enveloped it, perfectly empty and loosely attached to the root. In this case, it is equally clear that the contents must have been absorbed.

Animals, however, exceed plants in one respect, in the power of absorption, for in them organized parts are often taken away by this process. Thus, we frequently see a wen removed by absorption, and emaciation is also effected by it. But in plants, parts that have been once organized, are never taken away, nor do plants ever diminish in size; they may cease to grow; they may decay; but they never become less by any power within themselves. When, in vegetables, an organ has executed its functions, it is thrown off; thus the parts of the flower surrounding the seed vessel, in most cases, fall off as soon as the pistil is impregnated, and, if any part remain, it is for the farther purpose of protecting the seeds until they are ripe.

That plants secrete equally with animals, is also clear; but in both cases, the same obscurity as to the nature of the process, exists. Wax is a secretion from the bee; bile is formed by the liver; the tears are a secretion from a gland in the neighbourhood of the eyes, but in each case we are ignorant of the mode in which they are formed. We trace blood-vessels to the various organs which secrete them, but this is all. Blood enters the organ; bile, tears, &c. are found as the result. The same thing occurs in the sap, which rises through various kinds of vessels; nothing is detected like the secretions that afterwards appear. Turpentine, camphor, gum, oil, Indian rubber, &c. are the va-

rious products of vegetable secretion. What are the processes employed by nature in their formation, we are as ignorant, as in the case of animal secretions.

The comparison here drawn is simply between the more perfect of each class. If, however, we are willing to proceed farther, analogies equally striking exist in the descending scale. In the higher class of animals the circulation is perfect; it is less perfect in the class below, and at length, together with the vascular system, it appears to vanish so entirely, that some of the zoophytes seem to be composed of a simple pulp. It is the same in the vegetable world. The tree exhibits a vascular structure of the most perfect kind; the vessels are very numerous; they are less numerous in the shrub, still less so in the herbaceous plants, in which a few bundles of vessels are found at distant intervals, till in the mushroom, and other plants of the same kind, they are wanting altogether.

In all these respects, then, and in many others, the similarity between the animal and vegetable world, is manifest and striking; we can neither fail to recognize it, nor recognizing, to admire. Before entering upon the next part of the subject, another link between animals and vegetables may be mentioned, which, should it be confirmed, will make the analogy still more remarkable. The French physiologist, Dutrochet, believes himself to have discovered a nervous system in vegetables, and asserts that this is most perceptible in the mimosa pudica, a shrub which evinces irritability, as I before mentioned, in a wonderful manner.

According to this naturalist, the composition of the nervous matter in plants, is of the same nature with that in animals, and, as it is more plentiful in the sensitive than in other plants, so it continues to increase in quantity, and in the varieties of forms it assumes, from plants to the lowest species of animal organization; from this to man, gradually becoming more and more complex as it advances in the scale.

While, however, the similarity alluded to exists, there are also many and great differences, and these clearly arising, in many respects, from the different circumstances in which plants and animals are placed.

Plants are entirely destitute of sensibility; they have neither perception nor sensation, and, in their want of this property, we recognize many of the differences which separate them from the animal world. The nutriment of vegetables is extended in almost every direction, for vegetables are confined to the soil, and, if this were not the case, they could not be nourished. It is afforded to them in solution, for otherwise they could not absorb it. Animals, on the contrary, move about and seek their food in different places; they have means of dividing and dissolving it within themselves, and hence they take it in a solid state.

Again, as different animals feed on different substances, they have different instruments for taking it. The beast of prey differs in the shape of his teeth and the formation of his jaw, from the

herbivorous animal; the bird from the quadruped; the eagle from the barn door fowl; but the same substances form the nourishment of every plant, or at least, all the substances upon which vegetables feed, must be afforded in a state of solution. Hence there is little or no difference in the rootlets, the essential parts of the roots in different plants. The fibrous roots of the gigantic oak, are, indeed, more numerous than in those of humbler growth, but, to all appearance, they are individually capable of absorbing little, if any more, than the rootlets of the lowliest shrub.

For the same reason, there is no use in a central reservoir, like the stomach of animals, for plants are perpetually drawing their food already dissolved, from the earth in which they are fixed. Animals, on the contrary, require some organ in which their food may be acted upon, that it may afterwards be absorbed, and changed into the substance of their bodies.

And hence, again, a still farther difference may be observed. The food of animals is taken in large quantities at once; it is acted upon by the stomach, and finally dissolved; and after its solution, it is carried to the heart, to be thence distributed through the whole body. Larger canals are, therefore, requisite in the first instance, and thus the various gradations of the blood-vessels are necessary; from the first large artery, to divisions so minute that they can be traced no farther. But vegetables have scarcely any variations in the size of their vessels, and, instead of gradually branching off as in the animal creation, each vessel proceeds from the root to the leaves, without imparting or receiving any branches from the root. Neither have the largest trees always the largest vessels; the sap vessels of the dandelion are actually larger, than many of the same vessels in some of our forest trees. In thus comparing animal and vegetable physiology together, you must at once perceive that the investigation of one, has a considerable tendency to throw light upon the functions and phenomena of the other; and it will be one object of these lectures to draw your attention more and more closely to this point. It must not be forgotten that all your present studies are intended to make you able and skilful practitioners; that you may contend with disease when it appears; recognize those symptoms which indicate the restoration or decay of healthy functions, and neither blindly urge on your remedies by scholastic rule, nor fearfully omit them, when they are demanded by nature. To do this well, you must know the animal functions in health, that you may know when and how these functions are disturbed by disease. And buried, as still are many of the phenomena of life, in deep obscurity, you cannot be justified in neglecting the study of any branch of science, which has a tendency to elucidate them. The light which has been cast upon the functions of man, and the improvements which have been made in the treatment of disease, by experiment and observation on the lower animals, is known and acknowledged; and it may yet be hoped, that by

extending our researches into the whole of animated nature, into the vegetable as well as into the animal world, we may discover much that is not only now unknown, but from which, when it shall be known, the greatest benefits may be derived to man. The reason assigned by the French physiologist, Dutrochet, for his researches, is, that life cannot be accurately studied in one part of the creation alone; all must be studied, that all may be known; while knowledge is incomplete, opinions can only be right by chance.

All our knowledge is the result of comparison, and the more numerous the objects we can compare together, the more perfect will our acquaintance be with all. In studying animal physiology alone, we perceive merely the differences that exist between the inorganic and animal world, and even these imperfectly; but by extending our researches into the phenomena of vegetation, we must necessarily acquire more accurate views of the peculiarities, by which not plants only, but animals, also are distinguished. It is a remarkable fact, that the first preparation in one department of John Hunter's museum, now placed in the College of Surgeons, in London, is a common hyacynth root, for the purpose, as Mr. Abernethy supposes, of shewing the analogy between animal and vegetable absorption. Who, with such an example before him, will dare to affirm, that the study of these two classes of living bodies is not intimately connected?

But, independently of these general grounds for the study of botany, there are some among you to whom more particular motives may be given. Some of you will necessarily be placed in situations far removed from the busy haunts of man, and that excitement to the exertion of the intellect, which, in such situations, must always prevail. If you have no pursuit, you must soon sink in the scale of intelligent beings; if you do not continue to exercise your minds, they will soon become incapable of exertion. In a country station, there are not many objects which you can pursue; those which require large libraries, and amply stored museums, can be followed up in large towns alone, for there only can such assistance be had. But in botanical science, you have a never-ending source of mental activity; each day you will find something to admire, and something to think upon, and thus will that intellectual energy be preserved, which ought always to accompany you in practice, but which is so often observed to be lost, in a withering and deadly apathy.

It is, perhaps, one of the most beautiful characteristics in the life of Dr. Jenner, one of the most striking proofs that his mind was above the common order, that, in an obscure village in Gloucestershire, he was ever alive to the phenomena of natural history. The situations of plants, the habits of animals, the influence of one part of the creation upon another, were ever before his eyes, and it was this which eventually led him to the discovery that has immortalized his name. Nor in all this, is there any thing which need take you from the constant study of that profession

which is the immediate object of your lives; but, on the contrary, you may even obtain farther power and more effectual remedies from the vegetable world around you.

The study of botany is, indeed, particularly calculated to encourage those habits of observation and accurate distinction, which are so requisite in the formation of a good medical practitioner. To the passing and superficial observer, many plants appear the same, which closer investigation proves materially to differ. The dandelion, the hawkweeds, and the coltsfoot, have all yellow blossoms, and to a certain extent resemble each other; they are of the same natural family; they exhibit the same colours; they are alike in their fructification; but a very little examination renders their differences so remarkable, that no mistake can again be made even on the most cursory view; but, in the distinctions of species, this habit of careful discrimination is necessarily cultivated in a still higher degree, for the differences here, though positive, are much less striking. One of the species of groundsell is separated from the rest, by the silkiness of the seeds; another, whose leaves very nearly resemble one with which it had long been confounded, is yet satisfactorily placed by itself, from the base of the leaves embracing the stems. Thistles, which were formerly associated under one head, are now divided, because the down of their seeds is found materially to differ; in some it is feathery, formed, indeed, exactly like the finer feathers of birds, while in others it is quite simple, or only slightly rough. These, and a variety of differences equally minute, require much and close attention to discover them; and to acquire the necessary accuracy, ought to be one of the first objects of the botanical student.

It cannot but be evident to you, that habits of such correct discrimination must be eminently useful in the practice of your profession. It will, indeed, require but little experience to teach you, that errors most frequently arise from deficiency in this quality, a deficiency which is not rarely exhibited by those whose general talents command our respect and admiration. But the vegetable world affords us many of our most valuable medicines, and England itself is wealthy in medicinal plants, though, because we can easily obtain them, we undervalue or utterly despise them. It is thus that foreign tonics have supplanted those of home growth, and our indigenous remedies are often the dearest; the dandelion, common as it is, is not always to be found in the druggist's shop, and I have known it sold for more than the columbo root, which is brought from Mozambique.

The tormentilla erecta, or common septfoil, is one of the most frequent plants in England; it is also one of the best of the vegetable astringents, yet it is postponed to foreign drugs, not more efficacious, though much more difficult to be procured. The colchicum autumnale, or meadow saffron, which is now supposed to be the base of the eau medicinale, is common in many of our meadows, and in some of the forms of gout and rheumatism, is

unquestionably of great utility. Yet years and years had passed away, without any attempt to introduce it into medicine, nor perhaps even now would it have been employed, had it not been for the great celebrity which the French nostrum enjoyed. The digitalis purpurea, or common fox glove, was known long among country people as an antidote in dropsy, before Dr. Withering, having his information from this source, recommended it in practice; and the spartium scoparium, or broom, a most excellent diuretic, is much more frequently employed by unprofessional persons than by medical men. These, however, and many other native vegetable remedies, the botanist will have no difficulty in recognizing; he may even add to the number of native medicinal plants; but if he is unacquainted with their distinguishing characters, the wealth of the country will be vainly opened to him.

It is notorious that even the druggists are supplied by the common herb women, with the indigenous vegetable remedies, few of whom, however, can be competent to distinguish them accurately. From the want of such a discrimination, the conium maculatum has been supplanted by the myrrhis temulenta, or rough cow's parsley. A plant which resembles the conium, in belonging to the same natural family, the umbelliferæ, and in the stem being spotted with dark purple; yet by those who are but slightly acquainted with the botanical character, it is scarcely possible that the mistake should be made. They would, indeed, suspect the identity of the plants, even were the similarity greater than it really is; for the hemlock grows universally in low and damp situations, and the rough cow parsley, almost as universally on dry and gravelly banks, or in poor and arid land. Nor is the mere distinction of the plants themselves, all that may be derived from the philosophical cultivation of botany. It is not enough to distinguish the genera and species, we must know when is the period in which their medical properties are the most perfectly developed. Now this is when the circulating fluid has undergone those changes which fit it for the nutriment of the plant, and when the juices are most concentrated in the part that is employed in medicine. The leaves, accordingly, should be gathered, (not as directed in the Pharmacopœia, when the flowers are fully expanded, for in this case they will have parted with a considerable portion of their proper sap,) but just as they are ready to expand, when it is rational to suppose that every thing is prepared for the nourishment of the flower and when nothing, as yet, has been drawn off. Leaves, indeed, almost universally lose considerably of their verdure when the flowers appear, but in no tree is this more apparent than in the horse chesnut.

Reasons of a similar kind, direct that the root shall be taken up in autumn, when the vitality and the common juices are almost confined to the part.

Nor are the advantages thus afforded to the country practitioner merely imaginary. It is of the highest importance for a medicine to be successful, that it should be employed in a proper state.

From inattention to this point, some of our most powerful remedies have frequently been brought into disrepute. The fox glove furnishes an excellent illustration of this assertion. This plant, which is, at the same time, a very powerful and a very dangerous medicine, if given without care, is also very frequently inert, and exhibits no virtue. Something may frequently be attributed to its preparation, but I suspect that medical men who reside in large towns, seldom place so much reliance upon it as those who reside in the country. These last are careful as to the time of gathering it, and seldom fail in procuring its specific effects when they administer it.

Botany is not, then, a mere idle amusement, but, like every other department of science, it offers many and great advantages to all who will diligently cultivate it. It will only be undervalued by those who are too indolent to enquire into its merits, or too well satisfied with their present acquisitions, to feel a desire of extending their knowledge.

But, Gentlemen, I would not willingly undervalue botany as an amusement. In an anxious and arduous profession like ours, rest must occasionally be required from our severer labours; hours must sometimes be spent in listless idleness, or relaxation must be sought in a change of occupation; and botany is, at least, an innocent occupation; it is more than this, its tendencies are all good and amiable; the enjoyments it affords are of the loveliest and brightest kind. Our intercourse with mankind is necessarily chequered with much that is displeasing and distressing; our best and holiest affections are oftentimes the sources of our greatest miseries. But how different is our intercourse with the vegetable creation; undefiled by the admixture of passion; undebased by selfishness; to use the emphatic language of Burke, on a far different occasion, "it is full of life, and splendour, and joy." Contemplating the beauty and the genius of creation; opening stores which the most industrious intellect can never exhaust, nor the most captious and critical mind refuse to admire; every step we take, in Spring, in Summer, or in Autumn, awakens sensations the most delightful, because they are the most pure. Every flower is associated with some admirable contrivance for its preservation, or its re-production; and while we yet wander amidst the glowing colours of the present season, we know that, such is nature's kindness and her care, so long as man shall be, and earth exist, the same splendid scenes shall be renewed; the same exhaustless wealth displayed; the same calm placid source of happiness afforded, to the last and latest descendants of the human race.

Gentlemen, you cannot study the phenomena of nature properly, without awakening your minds to higher aspirations than this earth can satisfy; you cannot become acquainted with the wonders she perpetually exhibits to you, without becoming better and happier, as well as wiser men.

ARTICLE V.

Observations on the TOPOGRAPHY *of* MALVERN, *having reference to its temperature and salubrity; to which, Tables, shewing the force of solar radiation, and some miscellaneous meteorological remarks, are appended.*

BY MR. ADDISON, SURGEON.

THE Malvern Hills constitute the chief natural beauty of Worcestershire, and have been styled, not perhaps very correctly, the Alps of England. This range lies at the south western extremity of the county, eight miles from Worcester, twenty from Hereford, and fourteen from Gloucester; its length is about nine miles, varying considerably in breadth at different points.

It is not my intention to enter here into any geological details respecting the Malvern Hills; I merely intend offering a few observations upon the circumstances which contribute to the salubrity for which they are so justly esteemed.

The village of Great Malvern is situated in a curvature or bend, formed between the masses of rock which form the two highest elevations at the northern extremity of the range; indeed, the towering and majestic rocks may be said almost to overhang it. From the village, the ground slopes considerably for a long distance, while the height of the hills above cannot be less than eight or nine hundred feet. Great Malvern being thus seated in a kind of recess, is very much protected from the northern or southern winds; and also completely sheltered from the western gale. It is, however, open to the east; and this has been generally considered a great objection to the place, as a resort for invalids and delicate persons. I am of opinion, however, that, taking into consideration the peculiar topographical situation of Malvern, its eastern aspect, instead of being objectionable, is one of its chief advantages. In the first place, an easterly current of air meeting these hills, which are thirteen or fourteen hundred feet in elevation, must receive a very considerable check in its progress, and, striking against them, will rebound, (i. e. a resilience, or backward current, will, in some degree, be established,) lessening the force of the wind, and counteracting its influence, before it reaches the hill itself; similar to what we observe to take place when the ripples or waves of a pond strike against a wall or high perpendicular embankment, where the resilience of the water breaks the force of the next coming wave. Malvern, like all other places, is occasionally subject to high winds, and sometimes to those violent gusts incidental to all hilly regions; but its exposure to the east wind is more apparent than real, and less, I believe, than many places much lower, and seemingly more sheltered, the hill above warding off, and striking back, (if I may use the expression,) the particles of air, thus lessening the force of the current. These circumstances, as

regards the health of individuals, would be very different were habitations nearer the summit of the hill, or not so immediately contiguous to its precipitous side. But there is a direct and very decided advantage arising from the eastern aspect of Malvern, and its situation on the inclined slope of the hill, which I shall now proceed to point out.

During the night, the earth and air are cooled, in a greater or less degree, by several concurrent circumstances. Now an inclined plane to the eastward is the first to receive and be influenced by the genial rays of the morning sun. And as the air in the shade is perhaps *invariably* colder, frequently very much so indeed, during the eight or ten hours before noon, than the air in the shade after noon, so therefore that slope which enjoys the full influence of the morning sun, will have that benefit at the period most required. Nor is it only on bright mornings that the benefit will accrue, for, however thick the canopy of cloud may be, there is always some portion of radiant caloric penetrating them, and reaching the earth.

I have not yet, myself, had an opportunity of shewing, by experiment, the advantages which an eastern aspect has over a western one, but the following table, copied from *Daniell's Meteorological Essays*, the only one I have met with applicable to the present subject, is sufficient to shew what I wish. A greater number of observations would, I doubt not, very often exhibit a much greater difference in the temperature of the air *in the shade, between sun-rise and noon, and noon and sun-set.*

"Table, shewing the force of solar radiation, and the progress of temperature in the shade, from morning to noon, and from noon to evening. The day on which the experiment was made, was perfectly calm and cloudless; the atmosphere free from mist; the dew point stationary at 57°, and only a few light cirri discernible in the south-east quarter of the heavens.

	THERMOMETER.	
TIME.	IN SUN. DEGREES.	IN SHADE. DEGREES.
A. M. 9	93	68
9½	103	69
10	111	70½
10½	119	71
11	124	71½
11½	125	72½
12	129	73
P. M. 0½	132	74
1	141	74½
1½	140	75
2	143	75½
2½	138	76
3	138	76½
3½	132	77
4	124	76
4½	123	77
5	112	76
5½	106	75
6	100	73

It must be remembered that the foregoing table does not commence until 9 o'clock in the morning, and (the experiment being made in June,) consequently 5 *or* 6 *hours after sun-rise.* But observe, the side of a hill exposed to the east, *(in the sun,)* would enjoy a temperature of 93°, while on the western side, *(in the shade,)* the thermometer would only stand at 68°, and so on (refer to the table,) till noon. At this time the sun would be leaving the eastern side to shine upon the western; but now the temperature of the air in the shade, (on the eastern side,) has risen to 73°, and continues even until after 5, p. m. of a higher temperature than the air on the western aspect of a hill even at noon. Now this effect will operate in favour of the eastern slope of a hill at all seasons of the year, and is quite sufficient to account for the earliness of the culinary vegetables and spring flowers at Malvern, and for the mildness of the air generally. The late Dr. Baillie characterized the atmosphere of Malvern as the air of Montpellier, and many persons have been surprised at the salubrity, warmth, and mildness of Malvern, during the winter. The aspect of a high and barren ridge of hill at this season of the year, is certainly by no means inviting; but I believe the reality will bear comparison with other more seemingly sheltered spots. With respect to climate, in cherishing animals and plants, Humbolt thinks that much more is due to the *annual amount of solar radiation,* than to mean temperature, especially if this last is only moderate, with much moisture; and the salubrity of Malvern, as regards the health of individuals; the quick growth of evergreens and shrubs; together with the speedy and early vegetation of plants generally, would seem to corroborate the idea. I may observe, further, that the air, as it becomes warmed by the sun, has a tendency to ascend; now the particles rising upward from a hilly slope, will therefore be replaced by the warmed particles coming up from below, not by the colder ones falling down from above.

There is another circumstance also tending to render the inclined slope of a hill to the east more genial and warm than most other situations, viz. the following condition of the atmosphere, which may be frequently noticed in this country. The sun rises in the morning with great splendour, and shines brightly for three or four hours; towards the middle of the day the clouds form and obscure it, disappearing again soon after sun-set; thus leaving the balance of advantages with regard to sensible caloric, wholly in favour of an eastern aspect.

From a review of the phenomena observable with respect to temperature, however, it is impossible to suppose that the mere depression of the thermometer is the *sole* source of those differences in the *salubrity* of the air, experienced in different situations; we must look further into the effects produced by cold, to understand the cause of those marked improvements in the health of individuals, which are brought about by *change of air.*

In a moderately still atmosphere, caloric is dissipated by the process of *radiation*, and as the surface of the earth becomes cooled, the lower strata of the superincumbent air being affected by the process, begin to deposit the aqueous vapour and other matters, which, previous to its commencement, they were able to retain in perfect solution: the accompanying condensation confines them to the lowest situations; hence all hollow places and valleys become filled not only with condensed and cold air, but with the vapours, fogs, and miasmatous matters it may chance to have contained, while the sides of a hill are in a great measure freed from them, their subsidence leaving the higher and warmer strata of the atmosphere to supply their place. It is from this cause that much greater quantities of dew are deposited in hollow situations and in valleys, than upon the more elevated regions. Now evaporation is another process which renders the air cold and chilly, and as more dew is deposited in low situations, so a greater degree, and a more protracted process of evaporation will take place in them, than in those places where less moisture is deposited.

Mr. Daniell remarks that "a valley is more liable to the effects of radiation than the tops or sides of hills; and it is a well-known fact, that dew and hoar frost are always more abundant in the former than in the latter situations. The influence of hills is, however, often prejudicial to the valleys at their feet, for the condensed and moist air rolls down their sides, and lodges at the bottom; these, therefore, are protected from the chill, while a double portion falls upon what many are apt to consider the more sheltered situation. It is a very old remark, that the injurious effects of cold occur chiefly in hollow places, and that frosts are less severe upon hills than in the neighbouring plains; and it is consistent with my own observations, that the leaves of the vine, the walnut tree, and the succulent shoots of dahlias and potatoes, are often destroyed by frosts in the sheltered valleys, on nights when they are perfectly untouched upon the surrounding eminences."*

The plain at the foot of the Malvern hills may very often be observed in the morning thickly enveloped in dense fog, while the hill is perfectly clear; and, during the autumn and winter, the trees and fields below are frequently covered with hoar frost, while the side of the hill, and the fields and trees in the immediate neighbourhood of the village, are quite free from any incrustation, and even when they are frosted over, I have almost invariably observed them to have thawed an hour or more before those further down below. The salubrity of the village of Great Malvern, and its fitness as a place of resort for invalids, may therefore, I think, be said to depend upon its combining the following circumstances.

* For some further remarks upon the influence of terrestrial radiation, in determining local salubrity and the site of malaria, the reader is referred to the Annals of Philosophy for October and November, 1828.

1.—An elevation sufficient to free it from the cold, damp, and miasmatous air, resulting from the process of radiation, thus rendering the air pure and invigorating.

2.—A high and precipitous hill, rising up in close contiguity to the habitations, which affords a shelter from *all* winds, increased by the ravine or bend in which the houses are chiefly built.

3.—The inclined slope of the ground to the eastward, receiving in the most favourable manner the first rays of the morning sun, i. e. at a period when the air has attained its minimum of temperature.

To all which, the beauty of the scenery around, and the extreme purity of the water, materially contribute, together with the advantage of a light and pleasant chalybeate, which has been of much service to a great number of invalids, particularly those afflicted with any form of scrofulous disease.

Whilst upon this subject, the following extracts from my Meteorological Journal, relating to fogs, may not be uninteresting.

Nov. 20, 1829.—This evening, about 10, p. m. I had occasion to leave home; the stars were shining very brightly, and the hill was perfectly clear; as I descended from the village, I got into a thick and very dense fog, obscuring all the stars except a few in a zenith: at 4 in the morning of the 21st, I set out on my return; the fog was still as dense as ever, two or three stars over head only being visible, and the moon in the eastern heavens just discernible; as I began to ascend Malvern hill, the fog became perceptibly thinner, and more stars visible; about 200 yards from the village it was quite clear; I think I never saw the stars so bright and twinkling, or the moon so beautiful, while the thick fog which I had just left could be seen still enveloping the whole extent of the lower country.

Nov. 21st.—This morning, none of the trees here have hoar frost upon them, but I can perceive that all those down below are thickly incrusted like snow; the fields here are not white, those below are quite so.

Nov. 28th.—A thick foggy, dark, and damp day; air quite still. I went to the summit of the Worcestershire beacon, the highest point of the hill; when I got nearly to the top, the sky became visible over head, and the sun shone brightly; the misty vapour driving just over the summit at a rapid rate, like columns of smoke, the wind blowing quite *fresh* from the eastward. The rocks and grass were thickly studded with long silvery crystals. When I descended, I soon lost the sun and blue sky; the fog became very thick, and the air perfectly calm and still, not a leaf stirring.

Dec. 6th.—Fog very thick in the vale below, just reaching up to my house. The hill, and the houses above mine, quite clear, enjoying a brilliant sun. The fog keeps oscillating, sometimes enveloping my house entirely, and advancing above it, then receding 100 yards or more from it. About 11, a. m. the fog advanced, obscuring the sun and the hill, and the day continued very foggy.

February 16th, 1830.—10, p. m. A very dense fog in the plain below, the top or surface reaching just up to the road running through the village; atmosphere quite calm; stars clear. At this time I had occasion to ascend the hill, to a house about 50 yards above mine, and I found myself, before I got there, completely clear of all fog; it was a curious sight; the lower parts of my house, and the neighbouring ones, were enveloped in mist, while the upper stories were quite clear; the body of the church was also hid by the fog, while the steeple rose majestically out of it. A most perceptible feeling of warmth in ascending the hill out of the fog, and of cold in descending into it. The ground frozen quite hard.

On clear nights the ground often becomes frozen quite hard, while the thermometer, suspended in the air, stands two or three degrees above the freezing point; and again, on a clear frosty morning, when the sun is shining brilliantly, every straw and blade of grass, in the shade, is sparkling with hoar frost, while the thermometer, suspended in the air above the ground, will sometimes indicate a temperature several degrees above freezing. These facts are so remarkable, that I shall further transcribe the remarks I made when I observed them, from my Journal.

Dec. 9, 1829.—Thermometer.

Time.....	9, a. m.	5, p. m.	7.30, p. m.	11, p. m.
Degrees,..	28	30	31	31

Morning.—Wind calm; northerly current. Atmosphere cloudy; hazy; frosty at places.

About 3, p. m. the canopy of cloud moved off in a compact manner from E. S. E. and the sun shone out. At this moment I had not an opportunity of observing my thermometer, but it began freezing very sharply. In about an hour it again clouded over, but the clouds now were thinner, high and *mottled.* It continued freezing, though not so rapidly. Now it is curious, that, notwithstanding the sharpness of the frost on the ground during the afternoon, the thermometer stood two degrees higher than in the morning, when the ground was only partially hardened by the cold.

January 7, 1830.—Thermometer.

Time,.....	9, a. m.	4, p. m.	8.30, p. m.	11.30, p. m.
Degrees,..	40	40	34	31

Morning.—Wind light, northerly. Atmosphere occasionally clear, and rainy.

8.30, p. m.—Clear; wind fresh, northerly. The ground has now frozen quite hard, and from being *very* dirty after the snow, frost and rain, is now quite hard. This is singular; one of my thermometers, fully exposed to the east, stands 34°, the other, open to the west, 33°.

11, p. m.—Clear and moonlight; ground frozen very hard indeed.

January 10th.—10, p. m.—Ground frozen quite hard; yet my thermometer, exposed to the east, stands one degree above freezing; the others still higher. Atmosphere clear; wind light, N. W.

February 16th.—Two hours before sun-set, the roads began freezing, the thermometer standing two degrees above 32° in the air, some feet above the ground.* Wind calm; atmosphere clear.

Feb. 14th, 1830.—A considerable quantity of hoar frost this morning. 10, a. m.—The hoar frost still sparkling upon the grass and upon the ground, in the shade, although the thermometer, hung in the air, in the shade, stands at 39°. This is a clear and bright day. The following table shews the difference between the thermometer in the sun and in the shade.

THERMOMETER.

TIME.	*In Shade. Bulb naked.*	*In Sun. Bulb covered with black.*	REMARKS.
A. M. 9,	38	60	In the corner of a window, out of doors.
9½,	38½	68	
10,	39	70	
11,	40	83	On a little slated lodge.
11½,	41	68	Against a white wall.
12½,	41½	68	
P. M. 1½,	42½	60	

1½, p. m.—Light clouds interfering with sun's rays.

The following table was made Dec. 17th, 1829. Wind calm; atmosphere quite clear here; foggy in the plain below.

THERMOMETER.

TIME.	*In Shade. Bulb naked.*	*In Sun. Bulb naked.*	*In Sun. Bulb covered with black.*	REMARKS.
A. M. 9,	34	...	50	The corner of a window, outside.
9½,	34	...	64	
9¾,	34½	...	65	
10,	35¾	...	67	
10¾,	35½	...	66	A slated lodge.
11,	...	53	64	Against a wall sheltered.
11.20,	36½	52	70	
12¾,	36	48	56	
P. M. 4,	34	...	...	

The table below was made Dec. 14, 1829. Wind calm; atmosphere clear; a *few* light clouds.

* In the above remarks I refer to thermometers 12 or 14 feet above the ground.

THERMOMETER.

TIME.		*In Shade. Bulb naked.*	*In Sun. Bulb naked.*	*In Sun. Bulb covered with black.*	REMARKS.
A. M.	9¼,	39	...	60	In the window, as above.
	10,	...	...	68	
	10½,	...	...	64	On the slated roof, as above.
	11,	...	...	68	
	12,	...	68	67	Against the wall, as above.
	12½,	...	62	65	
P. M.	1,	...	60	60	
	3½,	42	...	...	
	7,	38	...	...	

MARCH 4th.—THERMOMETER.

TIME		*In Shade.*	*In Sun. Bulb naked.*	*In Sun. Bulb covered with black.*	REMARKS.
A. M.	8,	33	48	...	
	8½,	34	54	75	
	9¼,	36	60	82	In corner of window.
	9¾,	38	58	80	
	10½,	41	56	79	
	11,	44	70	70	The blackened thermometer hung against a wall exposed to the wind. The uncovered in a corner of the wall close by, upon the ground.*
	11½,	...	72	74	
	12,	...	66	72	
P. M.	1,	...	58	64	
	1¾,	47	58	64	
	3,	46	53	58	
	4,	..	...	...	
	10,	34	...	...	

Wind.—Morning, very light, southerly.—Noon, fresh, ditto. Evening, more moderate.

Atmosphere clear. 9¼, a. m.—Hoar frost still sparkling upon the grass in the shade.

Now, with regard to the facts which these tables, imperfect as they are, and the preceding observations disclose, I would offer the following remarks. It is very extraordinary that we do not witness a very much greater effect in the shade, from the radiant caloric of the sun, than actually takes place. On the 14th of February we have seen the thermometer, exposed to the rays of sun, at 10, a. m. 70°; one in the shade, suspended in the air, 39°, while the hoar frost on the ground, in the shade, was untouched. Again, on the 4th of March, the thermometer in the sun, at 9¼, a. m., 60° and 82°; one in the air, in the shade, 36°. The hoar frost on the ground, in the shade, undissolved; what becomes of the flood of caloric poured in upon the earth, on a bright sunny day? The air shews but little of its influence, while the surface of the earth, not immediately impinged by it, retains its silvery coat of frost. The following facts, having some relation to the present subject, I may mention here. Doctor Gerard, who visited the valley of Sulej, in the Himalaya mountains, be-

* The imperfection of the above tables I beg to account for, by reason of the hill obscuring the sun soon after 3, p. m. at this season of the year.

tween 14 and 15 thousand feet above the level of the sea, observed in the morning, the thermometer 8° 33 cent. below Zero; yet, during the day, the rays of the sun were so hot as to be unpleasant; at one spot, 20,000 feet or more in elevation, at one o'clock in the afternoon, the thermometer was 2° 78 cent. below Zero; notwithstanding this extreme elevation, the action of the sun had an unpleasant effect, although in the shade the air was freezing. A friend has likewise mentioned to me, that in crossing the Andes, in South America, he experienced the benumbing cold of the wind, and scorching of the sun, at the same time; one side of his body being *frozen* with cold, while the other was *burnt up* by the sun.

The remarks which I have noted with respect to the freezing of the ground, are exactly analogous with the effect which takes place in the operation of making ice in India, where the water in the pans becomes frozen, although the air is sometimes several degrees above 32° F., and in strict accordance with the experiments of Dr. Wells. It appears also that the process of radiation goes on rapidly, notwithstanding a high wind, provided the air be clear; and that water is converted into ice much more readily by the process of radiation, notwithstanding the air being some degrees above freezing, than by currents of air 2 or 3 degrees below this point. Nay, more, it would seem that the radiation of caloric from the surface of ground, in a clear atmosphere, in the shade, counterbalances the flood of caloric poured in from the sun, by which the coating of hoar frost is retained, notwithstanding the rise of temperature in the air. If the atmosphere becomes overcast, the thermometer, in the sun, would rapidly fall, that in the shade, become stationary, or perhaps even fall a little; yet the hoar frost now disappears, by the stop thus put upon the radiating process. These facts are curious, and hold out an inducement to further investigation.

ARTICLE VI.

A Case of INCIPIENT MELANCHOLIA, treated by pressure on the Nerves of the Neck and Carotids.

BY W. R. CUBITT, M. D., KIDDERMINSTER.

MR. ——, æt. 30.—August 8th, 1825.—Is of low stature, short thick neck, rather fair complexion, and florid countenance. Says his health has many years been in a declining state, but within these last six, much more so; that his spirits are at one time extremely elated, at another, depressed. His father was of a melancholy temperament, and in his latter days sequestered himself from society, and kept his bed. He observes that, from the period of his taking up the business of hawking earthen ware, about eight years ago, he has felt a most inordinate desire to accumulate money; this mental anxiety he is sensible has much aggravated his malady, and impaired his intellectual faculties,

so as to induce him, for a time, at least, to desist from his employment. Complains of a great weight in his head; occasional sensations of a sudden rush, or determination of blood, as it is commonly considered, to this vital part, with flushings of the face. After these alarming symptoms have subsided, there is a great depression of spirits, langour, and drowsiness, with imperfect vision; he is unable to settle at home, or to remain in one place long together; his mind is hurried upon the most trifling occasions, and his memory is become extremely treacherous. He possesses a highly exalted sensibility in the epigastric region, with the greatest dread of the slightest pressure being applied; and in the same situation, he experiences an almost constant pulsatory sensation, with or without an increased action of the heart; has generally a severe impeded respiration, and, to use his own expression, "he feels, at times, as if his navel was drawn tight to his back bone;" there is great internal heat, indigestion, and flatulence; a numb feeling in his arms, extending to his hands; the same in his thighs, to his feet; white mucous expectoration in a morning; no pain in his head except when he thinks much; any sudden impression, as fright, immediately causes a loose fœcal evacuation; is much hurried in his sleep; starts up suddenly in bed in the greatest distress of mind, and finds himself very hot, but without thirst; now and then throws up a little water from his stomach, and sometimes a small quantity of bile; his lower extremities are extremely feeble, and much more so when there is great excitement in the sensorium. Branches of the fifth pair of nerves, to the nose and left eye, are affected, as well as all the nerves of the neck; and the carotid arteries beat unusually strong, particularly the left; when the palms of his hands and soles of his feet, are hot and dry, he feels best; when a sour sweat exudes from them, he does not feel so well, and sleeps less; sleeps about three or four hours on first going to bed, and then becomes hot and restless. On getting out of bed in a morning, he is under the necessity of immediately using the night stool; has long noticed that his testes are cold at night, and warm by day; there is oftentimes a jerking in them, and contraction of the organs, the cause, he thinks, originating about the umbilicus. Tongue is clean; urine uncertain; pulse full and strong, with much excitability. As this case is introduced with a view to bring into notice an instrument, purposely invented to produce pressure on the nerves seated on the anterior portion of the neck, and carotid arteries, the treatment will be slightly passed over. The case being considered to depend upon an highly exalted irritability of the nervous system, my principal efforts were directed to allay and subdue its morbid excess, for which purpose very large doses of belladonna, cicuta, and stramonium, with a minute quantity of calomel, were prescribed, which had the desired effect of moderating and tranquillizing, to a certain extent, the undue excitement. Small numbers of leeches, not exceeding four at any one time, were applied to the

temples; the first application was attended with some advantage; the second with no sensible effect; and the third and fourth with decided prejudice, producing debility, irritability, anxiety, and depression of spirits. The dyspeptic and other complaints were attended to. It was too evident, notwithstanding there was a general amendment of the cerebral and other complaints, that a very protracted period would be required to establish health, if it depended upon medicinal treatment only; other means suggested themselves, and I determined upon a trial.

Having frequently and satisfactorily ascertained that pressure on the nerves of the neck, and carotids, at all times relieved the most prominent characters of the disease, I attempted to contrive an apparatus that should furnish me with the means of applying pressure permanently.

On Nov. 3rd, the instrument being completed, it was applied over the nerves on the left side of the neck and carotid artery, and a regulated pressure maintained by means of a screw; in a few minutes the patient had the satisfaction to feel a decided mitigation of his moral and physical sufferings.—The following is a faithful statement taken from the patient himself, and in the presence of a gentleman of great respectability; about a quarter of an hour after the application of the instrument, he said his head felt more light and comfortable, and his mind more settled; the extreme sensibility in the epigastrium had subsided, as well as the pulsatory motion; the action of the heart was more regular, and the breathing more pleasant; his inside cooler, and no eructions; eye-sight natural, the deceptive appearance of the motionless state of the trees and clouds, during a severe stormy day, no longer existed; can stoop to tie his shoe-strings, or pick up small objects from the ground, without that terrific sense of blood rushing to the head; his feet, which had been burning hot, now felt cool; in a word, the frame generally felt a benecial change. Having watched, and satisfied myself that no evil was to be apprehended from the use of the instrument, I desired my patient to walk a mile or two out, a hilly road being selected for the purpose, to try still further its utility; he had not proceeded a mile, before he was overtaken by a storm of wind and rain, which caused him to return with all possible speed, and notwithstanding this, he was little, if any more, inconvenienced than other persons in health are, under similar exertion, except that he felt a slight dragging sensation at the umbilicus; having been some hours without food, he was desired to eat something, and call again in an hour or two. After dinner I again saw him, he stated that he relished his food, and that it agreed remarkably well; was free from that dragging sensation at the umbilicus; no eructions, morbid heat, drowsiness, nor langour, and once only had a feeling like blood determining to the head.

4th.—Walked home yesterday in much better spirits, with increased strength and energy; soon after he was in bed, he fell into a composed, tranquil sleep, out of which, in a few hours, he

awoke, frightened and trembling; on examining the screw it was discovered to be loose; on its being properly adjusted, sleep again returned for a considerable time; in getting out of bed he had the usual urgent calls; walked here with more strength and vigour.

5th.—All things proceeding satisfactorily, he employed himself, yesterday, on his return home, in digging his garden, and from this and other exertions, he felt his spirits cheered and revived; his hands and feet are more cool and natural; went to bed about ten, and slept till nearly five; previously, on awaking, he felt alarmed, depressed in spirits, with a dread of death, and unwillingness to converse; his testes, which were formerly cold at night and hot by day, are now at one uniform temperature; he eat his breakfast this morning with appetite.

12th.—Evidently mending, but is frequently annoyed by the screw becoming loose. One circumstance alone, he says, sufficiently convinces him that his mind is stronger, and less liable to sudden and serious impressions; a person was accidentally drowned, and unexpectedly brought to the house he was at, yet this melancholy event made then no particular impression on him, though at any preceding period it would have been attended with alarming consequences.

19th.—Since his last visit, he walked eight miles out, and back, an undertaking he could not have accomplished without the use of the instrument; the screw frequently gets out of order, which causes the old symptoms directly to return, but are soon removed on its adjustment. The nerves and carotid on the right side are becoming rapidly exalted.

27th.—A new instrument, with screws on each side, has been worn four or five days with happy results.

January 7th, 1826.—From last report, upon the whole, he has been going on satisfactorily. The efficacy of the instrument being fully established, and the probable necessity of his continuing to wear it some considerable time, an ingenious artist at Hinckley, was employed to construct another, upon a principle that would admit of rotatory motion, and prevent abrasion of the skin, and some other inconveniences; No. 2 was the first constructed which answered remarkably well, except it did not admit of sufficient pressure being applied; after wearing it a few weeks, No. 3 was substituted for it, and the alteration was effective; his improvement, of late, has been slow, but steady.*

18th.—Not so well; his head more uncomfortable, which he attributes to alarm, from the sudden illness of one of his children; the cerebral disorders relieved by leeches.

March 4th.—Since last report, has been induced, by the earnest solicitations of his wife and friends, and totally against his own inclination, to consult a physician, who, on his attention

* The instruments No. 2 and 3, have been left in the hands of Mr. Weiss, instrument Maker, for the inspection of the profession.—EDITORS.

being directed to the instrument, at once condemned it, and declared it would cause death or apoplexy, without one question being asked as to its efficacy or inefficacy. From the remarks of this physician, on the perilous consequences of wearing the instrument, and at the tiresome solicitations of his friends, he was induced, at the expense of his own feelings, to discontinue its use about three weeks, during which time, he most positively asserts, that he felt the strongest conviction that he was relapsing into his former irritable state; that he became weak and trembling, and could not sleep so well, &c. &c. On resuming it, a general amendment of complaints ensued; he says, at all times he feels more steady and firm on his legs, when he bears any weight on his arms.

18th.—A gradual amelioration and amendment of his malady; variety of auxiliary measures have been resorted to, with some apparent benefit, amongst the principal, tartar emetic ointment to the back and shoulders; and two issues were inserted in the nape of the neck, which were continued up to July with service; this was the last time of my seeing him professionally.

About July, the following year, I called to see him, and was pleased to find his health had undergone considerable improvement; he informed me that he attended to a small farm, and derived much amusement and comfort from it; that his mind was more tranquil, and home more desirable than it had been for years; the instrument had been discontinued, but the issue remained, and that he had before him the cheering prospect of still further amendment, instead of the gloomy and melancholy one of being immured in a lunatic asylum.

It has already been noticed that, in the case under consideration, the father possessed a melancholy temperament, and the son a strong hereditary pre-disposition, or bias, to insanity; there were, according to the general acceptation of the terms, plethora, increased vascular action of the carotids, determination, and congestion about the head, flushings of the face, and, at times, injected vessels of conjunctiva unusually distended; the mind was extremely anxious, excited, or depressed; and there was also exalted rapidity and expression of idea, and groundless apprehensions, with many other indications of functional derangement, denoting inflammatory action in the brain and its meninges, the proximate cause, as it is assumed, of all, or almost all, cerebral affections. In the common theories of inflammation, every thing is attributed to the sole agency of the blood-vessels; and every sense of determination to the head, to a sudden impetus of blood to that vital organ. Under such received impressions, the merits of this case cannot well be discussed, without first touching upon the pathology of inflammation. It is contended by some, that where there is inflammation, there is also increased action, with partial spasm and constriction of the blood-vessels, that they are more distended with blood, and their calibre consequently enlarged; whilst others contend, under

such circumstances, that the tubes are contracted, and less blood is circulated through them; but all agree that a larger quantity of the vital fluid is detected in an inflamed, than in a healthy part, after death. I feel disposed to consider what is termed inflammation of the blood-vessels, to be the effect of excessive excitement transmitted to these organs, through the instrumentality of the nerves, and, according to their irritability, or the morbid condition of the system or parts, so will be the excitement of these vessels; that a larger quantity of blood really is transmitted, or absolutely circulated, through an *actively* inflamed, or irritated, vessel, is opposed by the spasms and excitability of the apparatus which naturally contracts upon the application of an irritant, till such time, indeed, as debility, the invariable sequel of super-excitement, ensues; then it is that the vessels dilate and fill, and the blood becomes but imperfectly propelled through their enervated tubes; the detection of distended vessels, from post mortem inspection, is not to be regarded, as too generally inferred, an unequivocal testimony of inflammation having existed; it may be the effect of debility of these organs, arising from a variety of causes. Considering the sense of sudden determination of blood to the head, as but imaginary and deceptive, I shall comment upon this point when I extend my remarks, in another paper, into the causes and effects of apoplexy and epilepsy, &c. The excitement and durability of stimulus on the nerves, will, in a great measure, depend upon a healthy or deranged state of the system, and its cause; for joy, anger, or gentle stimulus, will produce through the nervous fibrillæ, the effect of increased capillary excitement, which subside with mental tranquillity, or removal of the exciting cause; but not so if the stimulus be the effect of an unhealthy change in these terminations, or of the constitution; or if it be transmitted from morbidly affected nerves, through their branches, to their fibrillæ. In inflammation, the blood, it is said, is the fuel by which the flame is kept up; if there be a flame, there must be an igniting material, of which the advocates of this doctrine have not favoured us with the knowledge; is it self combustible? It is readily granted that the blood, after it has undergone some morbid change, does irritate the delicate and sensible structure of the internal coat of arteries, and thus keeps up irritation, which, although remote, may be propagated to the brain, through the nerves, and cause mental excitement and functional disorder, and, if long continued, disease of the meninges, &c. Whether, in this instance, the excess of irritability commenced in the encephalon, or whether it was sympathetically propagated, I had not sufficient means of judging; nor could it be ascertained if it proceeded from moral or physical causes, though both, at the period of his consulting me, powerfully operated to aggravate the disease; and the duration of the constitutional disturbances indicated a tiresome and protracted period for the removal of the malady, if ever effected. The symptoms already enumerated, evidently confirmed

that there was inflammation (irritation) of the encephalon, and the only safe treatment, according to the generally received opinion of the present day, is bleeding and depletory measures; here, then, is a formidable error, derived from scholastic doctrines and high authorities; theory opposed to practice. Had an active depletory treatment been pursued, I hesitate not to affirm, from having most anxiously and attentively watched the case, that the patient would have sunk immediately into a low melancholy state, from which it would have been out of the power of art to have roused him. It will be remembered a few leeches, the first time applied, proved benefical; the second time, they appeared to be ineffective; and the third, they were decidedly prejudicial; and this I have frequently noticed under similar circumstances. Pressure upon a nerve, directed to an inflamed or irritated part, during the experiment, almost invariably mitigated or subdued pain, and in the case before us, pressure on the nerves of the neck and carotids, had a similar effect; this induced me to try permanent pressure by the means already noticed. No one, who has dispassionately read and attended to the case, can forbear to acknowledge that the several instruments employed, had a salutary effect in subduing the most formidable symptoms of this most distressing malady; its advantages, when applied, and its consequences, when removed, claim for it consideration and further trial; but how far it may be applicable and efficacious, in more exalted states of mania, remains to be proved by the *test of experience*. Objections were raised to the use of the instrument, under the impression that it might press too powerfully on the veins of the neck, and retard, or prevent, the return of blood from the head, and thus cause apoplexy; this apprehension had not escaped consideration; a fair trial, under very unusual pressure, previously to trusting the patient to his own guidance, satisfied me that such fears were groundless and futile. An accidental occurrence still further confirmed how little there was to dread speculative reasoning on this subject; as on one tempestuous day, this patient, on visiting me, had to encounter very boisterous weather; on first seeing him, I confess, some considerable alarm was felt at his appearance, every vessel in his face and conjunctiva looked full and loaded with blood; the pressure, which had been most unjustifiably increased against positive orders, was immediately reduced, and alarm ceased; but this appalling aspect must not be altogether attributed to mechanical pressure, for persons under similar exposure frequently present almost livid countenances. The benefit I anticipate to be derived, as an auxiliary measure, from the instrument, is by admitting pressure to be applied to the nerves and blood-vessels of the neck, and thus check, if not prevent, undue irritability being transmitted to the encephalon; ever considering the nerves the principal, the blood-vessels the subordinate, agents of cerebral excitement.

Whether our inventive faculties may prove beneficial in more instances than one, time must decide; be it as it may, I have the inward satisfaction of having contributed *something* towards the mitigation of human sufferings.

ARTICLE VII.

A Case of EXTIRPATION of a curious TUMOUR.

BY JAMES HOLBROOK, M. D.

To the Editors of the Midland Medical and Surgical Reporter.

Gentlemen,—In the August number of your valuable Journal, and which I have only just received, under the head of Hospital Reports, the case of James Voyce has particularly attracted my attention, from having subsequently fallen under my care; and if you think the following statement of its termination, worth insertion in your next number, you are at liberty to make use of it.

I was sent for to him on the 12th of June last, by the clergyman of his parish, who was desirous that some professional assistance should be afforded him, to soothe the remaining period of his existence, the termination of which appeared to be fast approaching.

The poor fellow informed me he applied to be discharged from the infirmary, in consequence of finding himself getting gradually worse, and from being told that, if an operation was attempted, it would be followed by a fatal result.

On visiting him, I was at first impressed with a very unfavourable opinion of his situation, from his extreme emaciated and hectic appearance.

He complained of pain in the side; short breathing; cough, with thick expectoration, particularly at night; and his pulse was upwards of 120.

He was lying on his back supported by pillows. A poultice had been applied to the tumour by a neighbour who had compassionated his situation, and which being removed, I examined the swelling; it was of the size and form described in the report. The part which had been punctured in the hospital had partially suppurated, and a thin offensive discharge issued from it. I passed a probe into the opening, but it extended only a short depth. The other appearances of the tumour also corresponded with the statement in the report, with the exception of the cord, which at this time was rather diminished than enlarged, and as far as it could be traced upwards from the tumour, had formed no adhesions to the surrounding parts.

The tumour was not very painful on pressure, but he complained of shooting pains through it; neither was there any tenderness in the course of the cord; but he had considerable pain in the loins, which he attributed to his position.

The history of the case immediately suggested to me the opinion of its being an old hæmatocele, in which I felt myself much strengthened, by the cord being so little altered from its natural state; and from having before seen a case of hæmatocele, accompanied with a secretion of pus, from the inner surface of the tunica vaginalis; which, from the symptoms, appeared to me as very probably to exist in this case, and would account for the shooting and throbbing pain through the tumour, and the greater degree of constitutional irritation than is usually met with in such cases.

My opinion, however, was expressed with much caution, and in these words: "as it appears a different view has been taken of this case, than the one I am disposed to form, I admit the possibility of my being mistaken; but unless something is done for the poor fellow, his life must very shortly be sacrificed to the irritation produced on the system by this local affection, for such I trust it will be found to be, and not a malignant disease; I therefore recommend him to be sent to Monmouth by some easy conveyance, on a bed, that by having him near me, I may be able to investigate thoroughly the nature of his case, and decide as to the propriety, or otherwise, of removing the part, which I now think ought to be done without loss of time, as it will not place him in greater danger than he is at present."

The poor man being glad, for the sake of his family, to consent to any plan likely to afford the prospect of a cure; the clergyman, with a degree of humanity highly creditable to his feelings, promised to provide a conveyance for him, and support afterwards.

He was accordingly brought to Monmouth on the 18th of June, on which night I directed him an anodyne, to endeavour to restore him by a little sleep; and on the following day a mild aperient, and a repetition of the anodyne at night.

On the 20th, having seen no reason to alter the opinion I had first formed, and the patient's resolution being firm, I commenced the operation, by making an incision across the suppurated puncture from above downwards, and extended it through the tunica vaginalis into the substance of the tumour, then, introducing my finger, scooped out a considerable portion of brown grumous matter, not unlike dirty rice pudding, when immediately about a tea-cup full of pure pus escaped. On examining further with my finger, I found a considerable quantity of firm coagulable matter, having the appearance of being partially organized, remaining in the cavity of the tunica vaginalis, and adhering firmly to it, which made me immediately decide on removing the whole mass, by separating the cellular adhesions of the external surface of the tunica, with the scrotum; when having passed a strong ligature through the centre of the cord, I divided it, and two vessels required being secured.

The operation was borne with great fortitude by the patient. The distension of the tumour being removed, the scrotum con-

tracted to a very small compass; and when the divided parts were brought together and secured, by suture, the appearance was such as would have thrown a doubt on any person's mind, who had not seen the case, as to so large a tumour having existed in that situation.

The dressing having been completed, he was laid comfortably in bed, and an anodyne draught administered, when he very shortly dropped into a sound sleep; and on visiting him a few hours afterwards, I found the constitutional irritation considerably subsided, and his pulse reduced below a 100, soft and regular.

No further medical treatment was afterwards required, except to regulate his bowels, and all the constitutional and pulmonary symptoms rapidly subsided. The wound healed by the first intention, with the exception of the parts where the ligatures had been; and on the 18th of July, exactly one month from the day he was brought to Monmouth, he was discharged, cured.

On examining the parts removed, the testicle was found in the middle of the extraneous mass, reduced to a very small size from compression, and not possessing the natural elastic feel of that organ. The whole mass of matter removed, filled more than a pint basin.

I annex the following as an additional and interesting example of the amazing restorative powers of the system, after the removal of a severe local disease, although, from not having any notes of the case by me, I can only shortly state from recollection, that the patient was a poor woman, who had passed the middle period of life, and had borne many children.

She had been suffering many months, from what had been supposed to be diseased hip-joint, and abscesses had formed and broken both on the outer and inner sides of the thigh. A thin discharge continued to ooze from the apertures for many months, and the constitution seemed to be sinking fast under the irritation of it, and of apparently pulmonary disease, indicated by a general hectic state, difficult breathing, pain in the sides, and other parts of the chest, cough, and a copious, thick, heavy expectoration, amounting to nearly a pint in the 24 hours, which had reduced her to an extreme degree of emaciation.

In this pitiable state, her dissolution was anxiously wished for, by herself and friends, to remove her from so suffering an existence; however, on visiting her one morning, I was informed a pin had worked out from one of the openings, which was shewn me, and it presented evident marks of the situation from which it had made its way, being blackened, and completely incrusted with calcareous matter.

From this time, the constitutional and pulmonary symptoms gradually subsided, and a powerful effort was also made by the constitution to repair the destruction that had taken place in the joint. She became strong and well in her health, and quite fat, but the limb was shortened, from the head of the thigh bone

having been absorbed, and a thin discharge still oozed from one of the openings.

This favourable state continued for several months, but I afterwards heard the affection of the joint returned, and fresh abscesses formed, which ultimately destroyed her.

ARTICLE VIII.

On the injurious effects of Stays and tight lacing.

The effects of a long continued pressure, are particularly observable in those persons who wear too tight clothes, and who, seeking a fine shape, use stays and corsets, and consider themselves elegant in proportion as their bodies appear to be divided into two parts, or approach the form of that of a wasp or an ant. To assure such persons that these cuirasses deform them and are injurious to health; that to strangle oneself in the middle is contrary to the laws of nature; that woman as she comes from the hands of her maker represents an ellipsis, the widest part of which is at the pelvis; or two cones, the bases of which meet there, and not four, is to render oneself ridiculous in the eyes of the sex. It is not very probable that physicians will ever be able to put an end to so universally adopted a custom, since the ordinance of Joseph the 2nd, Emperor of Germany, which was well-calculated to produce such an event, had not the slightest effect. To give an air of ridicule and contempt to this custom, Joseph issued an imperial decree, forbidding the use of stays in all female orphan houses, convents, and all institutions devoted to the education of the sex; and which, moreover, directed that all females condemned to correctional punishment, should thenceforth wear stays and hoop petticoats. Most women pretend that, if they did not wear stays, they could not hold themselves upright; such, probably, is the case with those who have long used them; already their muscles are partly paralyzed, and when they are not supported by this bandage, they lean forward, and their bodies take all sorts of bad attitudes. It is stays and corsets, in the greater number of cases, that produce the deformities known by the name of high shoulder, elevated hip, round back, &c.

It is from the earliest years that stays must be left off, it being at this time that they do the greatest mischief, particularly in weakly and delicate children, as they then act not merely on the muscles, but also on the bones. It is, therefore, mothers of families, from infancy that you must forbid your daughters their use, and you will not then have to lament over their deformities, when they shall have attained a greater age; you will not have to hide an inequality in the shoulders; to fill up a hollow corresponding to an elevation; to use inclined planes, or to send your children to orthopedique establishments. Behold your sons, who are straight and well-made, because they have not

been thus bound, but have enjoyed a freedom of motion, which has equally exerted all parts of the body.

From Dr. Conrad Molk's, of Krautweiler (Bas-Rhin,) "Considerations sur les causes et sur le traitement des courbures de la Colonne Vertébrale."

ARTICLE IX.

An account of the Norwich and Norfolk Medical Book Society, communicated in a letter to Charles Hastings, M. D.

BY JOHN YELLOLY, M. D., F. R. S.

My Dear Sir,

I have much pleasure in transmitting to you, according to your desire, an account of the Medical Book Society of Norwich and Norfolk; and should be very happy, if the success which has attended this institution, should lead to the formation of similar establishments throughout the kingdom.

Many years ago, the physicians and surgeons of the Norfolk and Norwich hospital, took in a few periodical publications among themselves; and this small association at last merged in a club or society, which embraced the other practitioners of the place, and whose objects were extended to the purchase of new medical publications generally. A book society was, after some time, formed among the professional men of the county, but as it was thought desirable that an institution should be established to take in both town and country, this was done about six years since, and the two associations united in one, under the somewhat lengthy appellation of the "Norwich and Norfolk united Medical Book Society.

I send you the rules of the society, the catalogue of its library, and some papers cannected with the details of its management; and shall state to you some of the principal objects which its regulations embrace.

It is managed by a president, vice-president, treasurer, and two secretaries, who, with twelve other members, of whom four belong to the city, and eight to the country, form the committee. The president and vice-presidents are elected alternately from the city and county members, and it has been the custom for the vice-president of one year, to become president the succeeding; but no member holds either of those offices for more than one year in succession. In electing to those two offices, the habit has been, as much as possible, to take physicians and surgeons in rotation. Two of the town, and four of the country, members of the committee, go out annually, and are replaced by a similar number from each division of the society; and at the first election, the gentlemen to vacate their places in the committee, were determined by lot.

The committee meet once a quarter, and at such other times as the president, or any two members of the committee, may

direct, three being a quorum. They order the books, and transact the other business of the society, and have the power of making temporary regulations, on matters not provided for by the laws, which are to be submitted to the next general meeting for confirmation. The making of new, and the abrogation of old, laws, however, are only effected at general meetings, and after due notice; and all changes *originating* at a general meeting, require confirmation at a future one.

The annual meeting is held in the month of July, when the members dine together; and at this meeting only, the election of new members takes place. This is done by ballot, and requires the assent of two-thirds of the members present, notice having been previously given of the names, residence, and designation of the candidates. A fine of 3s. 6d. is exacted for non-attendance at the annual meeting, and these fines go to defray part of the expenses of the dinner of the following year, the remainder being paid by the gentlemen present.

The payment, on admission, is one guinea; and the annual subscription, (paid in advance,) is one guinea for country, and a guinea and half for town members. It was considered that the greater facility of consulting books in the town, than the country, justified this difference in the annual subscription. The society commenced with 81 members, and has at present 97.

With regard to the mode in which the circulation of books is managed, the members are divided into four districts, one comprising the town members, amounting to about 25, and the other three the country members, who form the remainder of the society. One of the secretaries manages the town circulation and correspondence, and those of one of the country districts; the other the circulation and correspondence of the two remaining country districts. The secretaries, in the first instance, transmit the books for circulation to one or other member, and the first reading is, as much as possible, alternated.

The library consists partly of stock books, which are consulted at the library, or taken out by members when wanted; and partly of such books as have circulated through the members, the duplicates being disposed of by auction among the members at the annual meeting, and the proceeds added to the funds for the succeeding year. Fines for the detention of books, are rigorously enforced, and the amount added to the funds of the society; and, as the expenses have been kept very low, having never exceeded 10 guineas per annum for the custody of the books, the sum annually expended in purchases has always been very respectable.

In the circulation of books, inconveniences will necessarily arise, in spite of the best arrangements. One of the principal, is the occasional accumulation of several volumes in the hands of the same individual; but this has been in some degree obviated, by nominating one member in every district, who may have the power of making such changes in the course of the circulation as he may deem expedient.

These are the principal arrangements connected with the Norwich and Norfolk Medical Book Society, and they have been very fairly adequate to the design of supplying books, both for circulation and consultation. The society has likewise had this important accessory benefit, that, in bringing numbers of the profession together, it has made them better known to each other, and has thus tended to establish or to confirm, mutual confidence and good will. It has not only evinced, but gratified, the growing taste for information possessed by provincial practitioners; and it affords the most reasonable grounds of expectation, that similar societies would succeed in every other part of the kingdom, if undertaken, as I have no doubt they would every where be, with zeal and intelligence, and with independent and honourable feelings.

That progression which is every where distinctly marked, has not been wanting in the medical profession; and few would have expected, a few years since, the establishment of extensive provincial medical societies, and of respectable and well-conducted medical journals. Among the latter, the Midland Reporter occupies a first place; and it has, among other important advantages derived from it, taken the lead in communicating information as to the topography of districts, which will offer a more speedy acquaintance with various localities of disease, than could be expected through the usual and previous channels of communication with the public.

In carrying on this species of inquiry, and in conducting it, if possible, with some degree of regularity over particular districts, a fund of interesting facts will soon be accumulated, which cannot fail, as far as they go, to have an important influence in the practice of our profession, and will, at the same time, evince the advantage and practicability of instituting inquiries in other parts of the united kingdom.

I remain, my dear Sir,
Your's, very truly,
C. YELLOLY.

Carrow Abbey, Norwich,
Jan. 29, 1830.

ARTICLE X.

Quarterly Reports of the Worcester Dispensary.

JANUARY to JUNE, 1829.

BY ROBERT I. N. STREETEN, M. D., WORCESTER.

1829. *FIRST QUARTER. JANUARY to MARCH.*

	Canal.	Sev.	City.	Sub.	Coun.	Tot.
Abscess, ...	1					1
Amenorrhœa, ...					1	1
Anasarca, ...	2		2			4
Ascites, ...		2				2
Bronchitis, ...	17	8	27	4	1	57
Carditis, (Chronic,)	1					1
Catarrh, ...			3			3

Cephalalgia, ...	2	1		1		4
Cholera, ...	2					2
Colic, ...			1			1
Constipation, ...			1	1		2
Cynanche Tonsillaris, ...	1					1
Diarrhœa, ...	3	3	3			9
Diseased Joints, ...	1			I		2
Dysentery, ...	1	1				2
Dyspepsia, ...	7	1	8	2	3	21
Enlarged Ovary, ...	1					1
Enuresis, ...		1				1
Epilepsy, ...			1			1
Erysipelas, ...	1					1
Fever, ...	8	3	9	1		21
Fever, (intermittent,)		2	1			3
Gastritis, ...	1					1
Hæmoptysis, ...		1	1			2
Hæmorrhois, ...			1			1
Hemiplegia, ...	1					1
Hepatitis, ...	2		2	3		7
Hydrothorax, ...		1		1		2
Hysteria, ...		1	1			2
Inflamed Leg, ...	1		1	1		3
Inflamed sub-max. gland, ...			1			1
Iritis, ...	1					1
Lepra, ...	1					1
Meningitis, ...	1	2				3
Menorrhagia, ...	1	1	1			3
Midwifery cases, ...	1	1				2
Nephritis, ...			2			2
Neuralgia, ...	1	1				2
Ophthalmia, ...			1			1
Palpitatio, ...				1		1
Paraplegia, ...			1			1
Pericarditis, ...			1			1
Peritonitis, ...		1				1
Phthisis, ...	8	4	7	3		22
Pleuritis, ...	2	5	5	1	1	14
Pneumonia, ...	5	2	6			13
Psora, ...	1					1
Rheumatism, ...	4	1	2			7
Sciatica, ...	2			1		3
Scrofula, ...	1					1
Syncope, ...				1		1
Syphilis, ...	3					3
Tracheitis, ...			1			1
Tumour, ...		1				1
Ulcer, ...	1	2	1		1	5
Ulcer of Cornea, ...			1			1
Ulcer of Fauces, ...		1				1
Wound, ...		1				1
Unknown,*	1					1
Total, ...	87	48	92	22	7	256

Deaths, 15 ; seven from phthisis, three from bronchitis, one from pneumonia, one from anasarca, one from paraplegia, one from diarrhœa, and one from abscess.

Re-admissions from last quarter, 17, one of which, a case of mania, proved fatal.

* This case is imperfectly entered in the Register.

1829. *SECOND QUARTER. APRIL to JUNE.*

	Canal.	Sev.	City.	Sub.	Coun.	Tot.
Amenorrhœa,	1					1
Ascarides,			1			1
Bronchitis,	6	1	5	1	2	15
Cephalalgia,	3	2	1	1		7
Colic,	1					1
Contusion,		1				1
Cystitis,			1			1
Diarrhœa,		2				2
Diseased Knee,	1		1		1	3
Diseased Mamma,			1			1
Diseased Spine,			1			1
Dyspepsia,	7	1	8		2	18
Dyspnœa,				1		1
Epilepsy,			1			1
Fever,	4	6	5	2	1	18
Fever, infantil. rem.	1	1	1			3
Fever, intermittent,	1					1
Fistula,		1				1
Gastritis,				1		1
Gastralgia,			3			3
Hepatitis,	1	1	2		1	5
Hernia,			1			1
Hydrops,	1	1				2
Impetigo,	1					1
Inflamed Rectum,		1				1
Leucorrhœa	1		1			2
Marasmus,			1			1
Meningitis,	1		1	1		3
Menorrhagia,			1			1
Neuralgia,				1		1
Ophthalmia,	1		1		1	3
Phthisis,	3	2	2	4		11
Physconia,	1					1
Pleuritis,	1		1	1		3
Pneumonia,	1		3	1		5
Rheumatism,	2		2	3		7
Scald,	1					1
Sciatica,	1					1
Scrofula,			1	1		2
Scrofula mesenterica,	1					1
Syphilis,		1				1
Tracheitis,	1	2	1			4
Unknown,	2				1	4
Total,	45	23	47	18	9	143

Deaths, 7; three from fever, two from phthisis, one from pneumonia, and one from dropsy.

Re-admissions from last quarter, 20, of which, one, a case of phthisis, was fatal.

Tabular view of the prevalence of Fever, Bronchitis, Phthisis and Dyspepsia, in the several districts.

1st.—FEVER.

	Total.	1st Qr.	2nd Qr.	Canal.	Sev.	City.	Sub.	Coun.
Cases of Fever,	39	21	18	12	9	14	3	1
Total Cases,	399	256	143	132	71	139	40	16
Proportions, 1 in	10.23	12.19	7.94	11.00	7.89	9.93	13.33	16.00

Deaths, 3.—1 in 13.

2nd.—BRONCHITIS.

	Total.	1st Qr.	2nd Qr.	Canal.	Sev.	City.	Sub.	Coun.
Cases of Bronchitis,	72	57	15	23	9	32	5	3
Total Cases,	399	256	143	132	71	139	40	16
Proportions, 1 in	5.54	4.49	9.53	5.74	7.89	4.34	8.00	5.33

Deaths, 3.—1 in 24.

3rd.—PHTHISIS.

	Total.	1st Qr.	2nd Qr.	Canal.	Sev.	City.	Sub.	Coun.
Cases of Phthisis,...	33	22	11	11	6	9	7	0
Total Cases, ...	399	256	143	132	71	139	40	16
Proportions, 1 in	12.09	11.64	13.00	12.00	11.83	15.33	5.71	—

Deaths, 9.—1 in 3⅔.

4th.—DYSPEPSIA.

	Total.	1st Qr.	2nd Qr.	Canal.	Sev.	City.	Sub.	Coun.
Cases of Dyspepsia,	39	21	18	14	2	16	2	5
Total Cases, ...	399	256	143	132	71	139	40	16
Proportions, 1 in	10.23	12.19	7.94	9.43	35.50	8.69	20.00	3.20

Deaths, none.

Fever.—The fever, during this period, was much more severe than that of last year, and seemed materially to have changed its character; the head being more affected, the disease generally in the first instance of a more active character, and shewing a corresponding tendency, in its latter stages, to assume the typhoid type. In one of the fatal cases, occurring in an old woman of worn out constitution, there was no evidence of local action, either in the head, chest, or abdomen, and she seemed to sink more from direct debility than from any other cause. An examination was urgently pressed for, but could not be obtained.

The proportional prevalence in the different districts, it will be observed, varies from that of last year, especially as respects the canal district; but the cases were not so decidedly of that character, which, we have been led to expect would arise from causes in action in that part of the city; and some facts occurred, which excite a suspicion, that the disease was of a more contagious nature than we have seen of late. It should, however, be mentioned, that several of the cases in the city district, occurred in a very confined situation, where, some time back, the drains were broken up and in a very bad state, and the waste water and refuse, which should have been carried off, lay quite exposed, in a stagnant state, emitting fetid exhalations of a very noxious character.

Meningitis.—Cephalalgia.—There were six cases of meningitis, and eleven of cephalalgia. Of these, six were males, and eleven females. Four were under the age of 14, and followed no employment; ten were engaged in the glove-sewing, or other sedentary occupations; two were workmen at the iron foundry, and consequently exposed to great variations of temperature; the remaining one, a case of meningitis with high excitement, was ostler at an inn, and a man of very intemperate habits.

Bronchitis.—Of the seventy-two cases of this disease, fifty-seven occurred in the first three months, while fifteen only were admitted during the second quarter, which, from the table, will appear to have been in more than a duplicate ratio of prevalence, during the cold damp weather of the beginning of the year.

The causes of bronchial inflammation, as deduced from the consideration of the occupations of those suffering under its attacks, naturally fall under three heads. Respiration of an atmosphere loaded with particles of dust, producing mechanical irritation, and subsequent inflammation of the mucous membrane: exposure to variations of temperature, or to the vicissitudes of the weather, by which the secretions from the membrane appear to be checked, and the same result induced: and sedentary habits, combined with a stooping position, which, by impeding the action of the respiratory organs, and consequently the free circulation of the blood through the lungs, will ultimately tend to produce congestion in the membrane lining the bronchial tubes.

Of the above seventy-two cases, nine come under the first head, six of them occurring amongst the leather-dressers, leather-grounders, &c., and the other three amongst masons. Twenty-three belong to the second head, viz., one leather stainer, six engaged in washing, &c., nine exposed to the weather, two maltsters, four exposed to great heats in the iron foundry, china works, gas works, &c. and one to great exertion. To the third head belong thirty-six, or one-half of the whole number, twenty-five of which were gloveresses, and the remaining eleven engaged in plain sewing, shoe-making, and other seden-

tary occupations, requiring a stooping posture. Four out of the seventy-two had no particular employment. Thirty-one were males, and forty-one females.

The ratio of prevalence, in accordance with the results of the preceding year, was much greater in the city than in any of the other districts.

Phthisis.—The number of phthisical cases was thirty-three, of which, nine, or 1 in $3\frac{2}{3}$, proved fatal. The influence of season is shewn, not only in the greater prevalence of the disease in the first quarter over the second, as appears from the table, but also in the mortality; the deaths in the first three months being seven out of twenty-two, or 1 in 3 1-7; while in the second they were two out of eleven, or 1 in $5\frac{1}{2}$. The number of males was twelve, of females twenty-one. Nineteen were engaged in the glove trade, viz. one leather-stoner, three glove-cutters, and fifteen glove-sewers; one in the china works, a burnisher; five in general sedentary occupations, and seven in active employments; the remaining case occurred in a child.

Pneumonia and Pleuritis.—From the number of cases of bronchitis, it will be seen, that inflammatory complaints were exceedingly prevalent at the commencement of the year; in accordance with which, the number of persons suffering under this class of pneumonic inflammation, was also more than usual. There were eighteen cases of pneumonia, and seventeen of pleurisy. Of the former, the males and females were equal, as well as the numbers of those engaged in sedentary and active occupations. Of the latter, five were males, all exposed to the influence of the weather; and twelve were females, of whom, ten were gloveresses, one was exposed to wet, the occupation of the remaining one was unknown. Whether the constant stooping position of the glove-sewers has any effect in producing this disease, is a question worthy of consideration, but one which requires a greater number of facts than we are at present possessed of to determine.

Dyspepsia.—Of the thirty-nine cases of this disease, thirty-two occurred in females, and only seven in males. Twenty-four were employed in the glove sewing, or other sedentary occupations; fourteen were engaged in more active employments; the occupation of the remaining one is not known. The three cases of gastralgia, all occurring in females of sedentary habits, ought to be taken into account with these.

Diarrhœa, &c.—There were eleven cases of diarrhœa, two of dysentery, and two of cholera, in all fifteen. Of these, twelve occurred in the canal and Severn districts, the remaining three in the city. Ten of them were females, and five males. One of the cases of diarrhœa, in a young man, aged 25, proved fatal, but under what circumstances, not having seen the patient, I am unable to say.

The details of several of the cases, occurring during this period, were of considerable interest, but it would be foreign to the objects of this report to enter upon them here.

ARTICLE XI.

BIRMINGHAM EYE INFIRMARY.

To the Editor of the Midland Medical and Surgical Reporter.

Sir,—I have again sent you a report of the diseases treated at the Birmingham eye infirmary, during the last three months, and have added some observations upon iritis and amaurosis.

I beg to remain,

Your's, &c.

RICHARD MIDDLEMORE,

Asssistant Surgeon to the Birmingham Eye Infirmary.

Ophthalmia, simple acute, 43; ditto chronic, 26. Acute ophthalmia, with pustules of the conjunctiva, 23; ditto with ulcer or

pustule of the cornea, 20; ditto with purulent secretion, 11. Ophthalmia, purulent, 7; ditto strumous, 16; ditto rheumatic, 3; ditto irritable, 7. Granular and cuticular state of the conjunctiva, 1; vascularity of the cornea, 3; opacity of the cornea, 14; increased or diminished convexity of the cornea, 2. (a) Iritis, acute, with or without ulcer or opacity of the cornea or hypopyon, 18; ditto chronic, 2. (b) Ditto strumous, 5. (c) Cataract, 2. (d) Amaurosis, 15, of various kinds and degrees. (e) Ptosis, 2. Inflammation of the palpebræ, 4; tinea, 21; lippitudo, 4; hordeolum, 9; entropion, 2; ectropion, 4; tumours in the eye-lids, 4; carcinomatous and other malignant ulcerations of the lids, 3; paralysis of the puncta lachrymalia, 2; inflammation of the lachrymal sac and duct, 1; stricture of the lachrymal duct, 2; fistula lachrymalis, 1; partial dilatation of the lachrymal sac and duct, 2; wounds and other injuries of the eye-ball and its appendages, 14.

a—In some cases of iritis, and inflammation of the deep seated textures of the eye, I have given the spiritus terebinthinæ with great advantage; if a patient, (with iritis,) from extreme delicacy or peculiarity of constitution, be unable to take mercury to the production of salivation; or if, having taken it, the acute symptoms only be removed, and a chronic disorganizing inflammation remain, I should strongly recommend the administration of turpentine in small doses, say a drachm two or three times a day; the early employment of turpentine, I would also urgently advise in inflammation of the choroid and retina.

b—Strumous iritis is a disease somewhat uniform in its appearance and history, obstinate in duration, and very little influenced by the modes of treatment usually recommended for its cure. The individuals most obnoxious to its attacks, are children, between the ages of six and eighteen, of a delicate constitution, fair complexion, light hair, and blue eyes; as soon as the disease has become established, the cornea assumes a misty appearance, patches of red vessels are frequently seen upon its edge; there is a zone of pink vessels around the cornea in various situations; the patient is troubled with profuse lachrymation, and great intolerance of light; the iris is almost inactive, and vision is considerably impaired; the eye-brow appears to project considerably before the eye; the muscles (if one eye only be affected,) become thicker and stronger than those of the opposite side, from their powerful contraction to exclude the light, and give to the countenance a distorted appearance; the pulse is generally quick and irritable; the appetite uncertain; the secretions unhealthy; the skin dry and harsh, but variable in temperature, the heat of the scalp being oppressively great, whilst the extremities are often chilled with cold. It would be trifling to enumerate the various plans of treatment recommended for the cure of this troublesome disease; no "one plan" will succeed; a treatment directed to the circumstances of each particular case, will always be necessary; for a delicate child, I should advise small doses of

the hydrargyrus c. cretâ every other morning; a grain of quinine twice a day; every other evening, a warm bath, and should the skin be harsh and dry, notwithstanding its employment, friction with the hand, or a soft brush should be used, and on no account should suitable clothing, with a view to maintain perfect warmth of the surface, be neglected; a small issue in the arm; moderate (not fatiguing) exercise must not be omitted, and perhaps riding on horseback, surpasses in excellence all other modes of taking it; without specifying any particular articles of diet, I may say in the general, that it should be of a light and nutritious character, animal food being allowed only every other day.

c—Only one patient has been operated upon for cataract during the last three months; this man had suffered from an explosion of gunpowder, which had lacerated the left cornea, torn the iris, occasioned its prolapse, and subsequently obliteration of the pupil; the cornea of the right eye was slightly injured, the iris wounded, and the capsule of the lens rendered opake: after the removal of inflammation, the following was the condition of the eye: (right,) a very small opacity of the cornea; slight adhesion of the iris at the temporal side, to the capsule of the lens; capsulo-lenticular cataract; this eye was selected for operation. A couching needle was passed through the sclerotica, separating in its passage the adhesion between the iris and capsule, the capsule was then freely lacerated, the lens broken, and the fragments pushed into the anterior chamber; measures were then taken to prevent severe inflammation, and in the course of three weeks, the man left the infirmary with a very useful degree of vision.

d—Having witnessed considerable advantage from the local application of strychnine in certain cases of amaurosis, it is my intention briefly to point out the kind of cases suited to its use, the best mode of applying it, and the cases in which its employment is counter-indicated: at some future period I may enter more fully upon the consideration of amaurosis; but shall, on the present occasion, limit my remarks to the points to which I have just referred. If a patient has over-worked the eye by long continued action, confined to the inspection of objects of the same colour and description, an enfeebled condition of retina (just as we produce an exhaused state of muscle by over exertion) will take place. If a man subject his eye to an unnatural stimulus, by looking for many hours daily at bright substances of the same or nearly the same colour—or to sudden transitions from an artificial glare to comparative darkness (as miners)—or to a diminished stimulus, as by working in dark rooms, or places imperfectly supplied with light—or to any cause allowing the visual textures of the eye to remain, for a long period, in a state of inactivity, as takes place where large opacities of the cornea, and fully formed cataract exists, the power of the retina will be partially destroyed—its susceptibility to the stimulus of light diminished; but in none of these cases will there be found any structural change in the retina or the optic nerve, any congestion

of vessels, or any discoverable alteration from a healthy and natural condition; nor will the system, in all probability, be found affected; no altered state of health sufficient to account for the dimness of vision, will be found to exist. At some kinds of employment it is necessary for the individual to work with the head bent forwards, declining, or the body so distorted as to favour the too liberal flow to the eye, and retard its return; inducing what is termed congestion; a distended state of vessels, unfavourable to free and active circulation; a condition of eye which is also frequently induced by the investigation of minute objects by the aid of powerful glasses. Loss or diminution of the power of vision sometimes comes on from certain causes which diminish the vigour of the system generally—as for instance: after profuse salivation, long continued suckling, menorrhagia, &c. In all these cases, I believe, the strychnine is calculated to produce great and permanent advantage, in combination, of course, with other remedies suited to the particular exigencies of the case—for example: if the retina be weakened in consequence of diminished vigour of the system, remedies adapted to strengthen the system, and a removal of the cause enfeebling it, might be joined to the local application of the remedy in question. But the power of the retina will not always return with the returning strength of the system; in such cases the strychnine is singularly valuable, producing, with wonderful rapidity, the restoration of the organ of vision. Strychnine given internally does not produce the same beneficial effect upon the retina, as when applied externally. The mode of using it is already before the profession. After having tried it in a variety of ways, and in different situations, I have not been able to discover a better method than that of blistering the skin above the eye-brow, and, after having carefully removed the cuticle, I sprinkle the powder upon the raw surface, taking care to pass a spatula upon the part so sprinkled, to secure it against removal and insure its absorption; a piece of linen (not greased) should afterwards be bound upon the part. The quantity with which I generally commence is the twelfth of a grain upon each side, daily augmenting the quantity, as the patient is enabled to bear it, until it amounts to the $\frac{2}{3}$ of a grain upon each blistered surface. Its first effects are—slight pain in the head, increased power of vision, and severe smarting pain of the part upon which it is applied. Some patients cannot bear its application; others require great care, and a very gradual augmentation of the quantity to enable them to bear it; whilst others will admit of its application without experiencing any other uneasiness than what arises from its action upon the sore. It is not necessary, I presume, to detail cases in support of my views; such a plan would greatly extend my observations, which I have been studiously anxious to limit.—I will now, for a short time, draw the attention of your readers to those cases in which the employment of this remedy would be useless or injurious. If the amaurosis be de-

pendent on any morbid condition of the brain; any alteration of the bony structure; any tumour or other substance pressing upon the optic nerve, the effects of former inflammation, such as opake deposition or partial disorganization, the effusion of blood or morbid growths, the enlargement of the vitreous or displacement of the crystalline humour, producing pressure upon the retina; a varicose state of vessels, as a consequence of distention so continued as to impair their tonic and elastic properties; inflammation of, or disease of, those parts incased by, or anterior to, the retina,—no benefit could be expected to result from the use of strychnine; but, on the contrary, in many of the cases, material injury might succeed its employment.

e—In one case of ptosis dependent on partial paralysis of the levator muscle, the application of strychnine was of singular service. Of course, if ptosis arise from a disease of the brain, or any deep-seated or structural injury of the motor nerve, or a thickened and enlarged condition of the eye-lid, it could be of no value.

ARTICLE XII.

The Lunatic Asylum at Wakefield.

In the whole range of subjects which fall under our notice as Journalists, we do not conceive any more deserving of consideration, than the state of the charitable institutions for the relief of the sick poor: neither do we know any circumstance that can give the Reporter a stronger claim to public attention, than a portion of its pages being regularly devoted to point out abuses in their administration, or suggest means for their improvement.

We are forced, in a manner, at this time, to reflections of this nature, by having received a pamphlet written by Dr. Crowther, of Wakefield, giving an account of the pauper lunatic asylum at that place, which discloses circumstances regarding the management and construction of that establishment, which call loudly for amendment. The governors of such institutions should bear in mind, that the situation in which they stand, is one of great responsibility, for they are not only bound to administer the affairs of such an institution so that it may be productive of the greatest possible benefit to the inmates who seek an asylum there, but they likewise owe a debt of gratitude to medical science; for it is only through the benevolent, and for the most part, gratuitous services of the medical profession, that the charitable exertions of the governors, can become effective in the relief of disease.

We have often regretted that the governors of medical charities, are not in general sufficiently alive to the necessity of keeping pace with those modern improvements in the construction of edifices for the reception of the sick, by which the probability of their being visited by infectious diseases, is very much diminished; but we should hope there are few instances, in this coun-

try, where inattention to the necessary precautions against the common sources of epidemic disease, has been followed by such serious evils, as appear from the following statement by Dr. Crowther, to have arisen in the Lunatic Asylum at Wakefield.

"It may be useful to state, or suggest, the measures which the governors of a public hospital would be likely to pursue, on finding that a considerable mortality had occurred in a public institution which they superintended; and to compare this with the conduct of the visiting magistrates of the West Riding asylum towards myself. The inquiry would, perhaps, be most clear and satisfactory, if pursued in the following order.

"1.—Is there any thing in the situation or construction of the building unfavourable to the health of the patients?

"2.—Is there any circumstance peculiar to the patients admitted, or to the manner in which they are discharged, likely to augment the mortality?

"3.—Have the physicians regularly attended to their duty, and are they competent to fill the office which they hold?

"On inquiring respecting the salubrity of the situation, and the peculiar structure of the building, the investigators would learn that the asylum has been frequently visited by dysentery, a disease which has been fatal to many patients. They would likewise learn that it has broken out at the asylum, when not prevalent elsewhere, and that when it was epidemic in the neighbourhood, the asylum was free from it. These facts would induce them to believe that dysentery was generated within the walls.

"On walking over the house, a disagreeable fetid odour, a malaria, might be perceived, which could easily be traced to the privies.

The asylum, from the centre to the extremities, is stuck full of privies, which ought to have been water closets. In fact, they now are water closets without water, which are worse than common privies, because the latter, if freely exposed to strong currents of atmospheric air, lose much of their malignant influence, while, in the former, the foul air generated ascends through the pipe of the water closet, and pervades every part of the house.

"To render these water closets innocuous, would require a stream of water to pass through them daily, sufficient to turn a mill, but it unfortunately has happened that a great scarcity of this useful article has existed at the asylum for ordinary consumption.*

"You cannot cram into an asylum, built to accommodate only one hundred and fifty patients, two hundred and fifty-six, without rendering it unwholesome. To the crowded state of the building, therefore, must part of the mortality be attributed.

"With regard to the second head of inquiry, it must be obvious to any man possessing common sense, that in any hospital, of whatever description, under the most skilful treatment, the number of cures, or of deaths, must depend upon the nature of the cases admitted. Where a very great majority of the patients consist of recent cases, with constitutions unimpaired by previous disease, and not far advanced in life, a very large majority will be discharged cured; but when, on the contrary, a very large majority of the patients admitted are cases of long standing, with diseased organization and exhausted constitutions, the mortality must be very considerable.

"In most hospitals, the incurable patients are discharged, after having remained on the books a definite time; but, in pauper lunatic asylums, they remain until set at liberty by death, unless discharged on account of being harmless, or by desire of friends who are able to support them.

"Out of 533 men admitted in eight years, only 28 have been so discharged. From the ninth report (for the year 1827,) it appears, that out of 114 patients who were admitted that year, 44 only were recent cases, who had not been ill

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* "Dysentery has again visited the asylum during the present month, October, 1829, although great expense has been incurred in altering the privies."

more than three months; 41 were old cases, who had been ill from one to several years; and 29 were patients who had been previously insane. The overseers of the poor, in order to evade the penalty of the law, often represent old cases to be recent ones, on which account the real number of recent cases, is, in reality, smaller than what is stated in the report.

"From some districts, particularly Sheffield, about four out of five, I speak from memory, are incurable cases. By examining the case books, it will be found that some were moribund, and others nearly so, on admission.

"Under the third head of inquiry, the magistrates may easily ascertain whether or not the physicians have attended regularly to their duty, but it is impossible for any one, except a physician well versed in hospital practice, to judge of their medical skill. No part of the duty of a physician requires more care and skill than attending insane patients."

As respects that part of Dr. Crowther's pamphlet which relates to the treatment he experienced from the governors of the institution, we shall only say that the unpleasant altercation stated by him to have taken place at the lunatic asylum, in Wakefield, is one of but too frequent occurrence in charitable institutions: experience leads us to assert they more generally originate in some crooked underhand policy of their subordinate agents. In the present instance we find, with surprise and regret, the insinuation of the apothecary and matron, received by a majority of a committee of nine governors, against their physician, (after eight years of gratuitous and highly approved services,) affecting his honour as a gentleman, or his qualifications as a professional man, or both, without his being allowed to meet his accusers, or even being informed of the nature of the charges insinuated against him. Exposed, as every physician and surgeon is, in establishments of this nature, to these malevolent attacks, from those he may have have occasion to reprove, or may, unintentionally, offend; he has an undoubted right to look up to those who have undertaken the superintendance of the establishment, as the natural guardians of his honour and professional reputation, when assailed in this manner by agents appointed and paid by them.

NOTICES AND ACKNOWLEDGEMENTS.

The Editors are sorry to be obliged to omit in the present number, the conclusion of Dr. Jones' paper on Prophylactics; Dr. M'c Cabe's remarks on the theory and treatment of Fever; Mr. Ricketts' Medical Topography of Droitwich; and Mr. Corbett's cases of Bronchotomy, &c.; as also some important Medico-legal cases. All of these, however, will appear in the 9th No. together with a paper from Dr. Walker, on the state of the medical art amongst the Jews, as recorded in the Bible; and some cases and observations by Dr. Hastings, illustrative of the connection between Bronchial Inflammation and Diseases of the Heart.

The Hospital Reports, the Meteorological Report and the Parochial Returns, for the last three months, will also be given in the 9th No. which will be published on the 1st of August.

All Letters and Communications, addressed, free of expense, (under cover,) to the Editors, at the office of the Worcester Journal, will receive immediate attention.

THE MIDLAND

Medical & Surgical Reporter,

AND

TOPOGRAPHICAL AND STATISTICAL JOURNAL.

HOMO, NATURÆ MINISTER ET INTERPRES, TANTUM FACIT ET INTELLIGIT, QUANTUM, DE NATURÆ ORDINE, RE VEL MENTE OBSERVAVERIT; NEC AMPLIUS SCIT, AUT POTEST.—BACON, NOVUM ORGANUM.

No. IX. AUGUST, 1830.

On the State of the MEDICAL ART among the JEWS, as recorded in the BIBLE.

BY J. K. WALKER, M. D., HUDDERSFIELD.

WHOEVER should take up the history of any people, for the purpose of extracting from it a faithful account of any particular art or science, would, in most instances, incur disappointment, inasmuch as historians profess to give a history of national events, and not a minute detail of the arts and sciences. Their bearing, however, on the character of nations, is so considerable, that there are few histories that are destitute of some information on this head; and it is from such general outline that the reader must fill up the sketch. This truth obtains in the history of the Jewish nation in particular. The children of Israel, while they were yet in the wilderness, were commanded to construct a tabernacle of unrivalled splendour for holy purposes, and, at the conclusion of this solemn injunction, it is said, "Take thou also unto thee, principal spices, of pure myrrh, 500*; of sweet cinnamon, 250; of sweet calamus, 250; of cassia, 500; of olive oil, an hin; and thou shalt make it an oil of holy ointment, an ointment compounded after *the art of the apothecary*."† The word‡ in the original for apothecary, is used in other parts of the Old Testament, and is always so translated in the other passages, from which I infer that the term, if not in all respects analogous to the same office in modern times, is yet demonstrative of the advanced state of the pharmaceutical art; and in a few verses

* I have not added the word shekel, because it is not in the original.

† Exodus, xxx. 23, 25.

‡ Rakare. 1 Samuel, viii. 13; and again in Eccles. x. 1.

after, the divine command is given to Moses. "Take unto thee sweet spices, stacte, and onycha, and galbanum; these sweet spices, with pure frankincense: of each shall there be a like weight: and thou shalt make it a perfume, a confection *after the art of the apothecary.*" It is not quite clear that, in the original, the relative quantity, as well as mode of composition, was not to be left to the apothecary; but it is evident that the office here incidentally alluded to, was coeval with the departure of the children of Israel out of Egypt. If, as is believed, the medical art was cultivated at that early period in Egypt, the Israelites might have gleaned some knowledge of the subject during their long captivity. The court of Pharaoh abounded with every luxury, and it is not likely the study of medicine would be overlooked; indeed, we are told that, on the death of Jacob, the *physicians* were commanded by Joseph to embalm his father.* The Seventy, indeed, have thought proper to translate the Hebrew word Rufai, embalmers, which appears rather singular, as, though the same word occurs repeatedly in the Old Testament, it will no where admit of such signification. Why is it not so translated where King Asa is reproved for placing confidence in the physicians? It is well known that, among the Egyptians, the priests exercised, in those days, what was considered the highest branch of the profession, which consisted of magic rites and ceremonies.† But besides these, there were other branches. According to Herodotus, each distinct distemper had its own physician, who confined himself to the study and care of that, and meddled with no other; so that one class had the care of the eyes, another of the stomach, another of occult diseases, &c. To one of these classes might belong the physicians who embalmed Israel, for among no people more than the ancient Egyptians, was the principle of a division of labour observed; and this was probably the fact in the age of Joseph, as well as that of Herodotus, especially in the art of physic, which would necessarily remain stationary, so long as the higher department was hereditary, and the son received and obeyed implicitly the instructions of the father.‡ Whatever,

* In Josephus' account of the polity settled by Moses, one of the laws states that, "if he that is smitten escapeth death, and yet *be at great expense* for his cure, the smiter shall pay for all that has been expended during the time of sickness, and *for all that he has paid the physician,*"

† These are the wise men and magicians of whom Moses speaks. On the strength of this use of the word physician, the author of the divine legation has indulged himself in forming an ideal picture of the grandeur, luxury, and politeness of the Egyptian people.

‡ Vide Herodotus. That the Egyptian physicians were little skilled in external complaints, seems probable from what Herodotus says concerning their inability to cure a common luxation of the foot, which Darius, the son of Hystaspes, had met with in hunting. They appear, however, to have been acquainted with the power of some valuable remedies, as of squills in dropsy, and of iron as a tonic.

however, was the state of the medical art among the Egyptians at this period, we are told that Moses was versed in all the knowledge of the Egyptians; and the health of the children of Israel, next to their religious improvement, was evidently a leading feature in the Levitical code. Among the curses of disobedience denounced on the Israelites, are the diseases of Egypt, which were either the plagues with which God afflicted Egypt during their captivity, or the diseases which were most common in that country. Now, we are told by Pliny that "Ægypti peculiare hoc malum Elephantiasis;"* and we know that, with many of the ancient writers, the two diseases, leprosy and elephantiasis, were regarded as convertible terms; on this topic, however, I shall hereafter beg to enter more largely, as there appear to be much confusion and great error in professional, as well as other, authors on this subject, as has been most satisfactorily shewn by that professional scholar, Dr. Mason Good. The Levitical code had for its primary object, to draw a line of separation between the Jews and their idolatrous neighbours, for purposes which we all know, and which it would be out of place to discuss here. But it may not be improper to remark, that the regulations imposed by that code, were, in a mere human sense, the wisest that could have been enacted for the preservation of the health of the people. The instructions, as to the selection of diet, the observance of cleanliness and frequent ablution, so peremptorily enforced, were admirably adapted for their personal comfort, while they subserved the higher and more holy purpose of maintaining a purer faith than the surrounding nations. The same may be said of the distinction between clean and unclean beasts, and the prohibition against eating blood, which, in a climate like theirs, was well calculated to preserve them from the bodily, as well as moral, diseases of their neighbours. We see how they drew the divine displeasure upon themselves, when they murmured in the wilderness, and cried, "Who shall give us flesh to eat?" Quails were given in wrath, and a deadly plague was the consequence. Whenever, indeed, the divine command was disobeyed, not only the personal happiness, but health, of the people, was made to suffer. At the rebellion of Korah, a plague broke out, by which 14,000 perished; and after the Midianitish festival, a pestilence broke out in the camp, by which 24,000 persons died. Foremost in the tremendous catalogue of calamities, denounced through the medium of Moses, as the punishment of apostacy, is this, "The Lord shall smite thee with a consumption, and with a fever, and with an inflammation, and with an extreme burning;" and in a few verses below, "The Lord will smite thee with the botch of Egypt, and with the emerods, and

* Lucretius adopted the common opinion.

Est Elephas morbus qui propter flumina Nili
Gignitur Ægypto in mediâ, neque prætereà usquam.

De Rer. Nat. vi. 1112.

with the scab, and with the itch, whereof thou canst not be healed. The Lord shall smite thee with madness, and blindness, and astonishment." In Leviticus, "I will even appoint over you terror, consumption, and the burning ague." I shall not, in this place, enter into the objections made to some of the terms adopted in our translation. Some of them might, perhaps, with propriety, be altered, but it is of the last importance to bear in mind the distinction between these penal visitations, and those natural diseases which happen to all men of every age or nation. How awfully the above denunciations were executed, the reader of the Jewish history will find too frequent proofs in the sequel of Jewish apostacy. But in the more auspicious periods of their history, while under the especial favour of Heaven, they did not enjoy any immunity from the ordinary deviations from health. So long as they maintained inviolate the great truths confided to their care, human affairs seemed to take their ordinary course, and, though a blessing was promised on their exertions, yet it was not conferred upon indolence, for it is said, "the idle soul shall suffer hunger." We see, for instance, among the blessings of obedience, fruitful seasons are promised, but these fruitful seasons were to crown, and not to supersede, the labour of the husbandman; and we do not find that they neglected to till the ground. The same was the case with the preservation of health; and at those periods when they had the greatest reason to rely upon the Divine favour, they did not neglect the ordinary means for preventing and healing diseases. Indeed, King Asa is reproved for placing his confidence in physicians, when he had a very painful disease in his feet, and for not applying to the Lord.* And it is clear, from the sentence of our Saviour, "they that be whole need not a physician, but they that are sick;" that it was a general custom to resort to medical aid in seasons of sickness. St. Mark, indeed, speaks of one poor woman, as πολλα παθουσα υπο πολλων ιατρων. And the same appears in other passages. It has been said that the priests were the physicians, because to them belonged the office of distinguishing the several sorts of leprosy, but there is no proof that they interfered, in other respects, *more medico*, at least it does not appear to have been the case in the latter ages of the Hebrew theocracy. Josephus† gives us no assistance in this question. He states, indeed, that the Essenes studied the nature and cure of diseases, and the medicinal properties of herbs and minerals, but with a few exceptions, he is

* 2 Chron. xvi. 12. Dr. Outram, in Libro de Sacrificiis, states, that among the Prefects of the Temple, there was one who presided over the medical officers attached to the service of the Temple. "Decimus (Præfectus) iis præfuit medicis, *quibus commissa fuit cura sacerdotum*, qui cum Sanctuarii pavimento discalceati versarentur, dysenteriâ sæpe laborabant." This would not be the case if the priests themselves practiced physic.

† Josephus, in speaking of the sickness of Hezekiah, says that the *physicians despaired* of him, and expected no good issue of his sickness.—Vol. 2, p. 51.

silent on those points that should illustrate the state of these sciences among the Jews. We find, however, repeated allusions to the Jewish physicians. In reviewing the natural history of the Bible, it is evident that, though much light has been shed upon it by the researches of learned travellers, much remains to be explained both in the animal, mineral, and vegetable kingdoms. It is from the latter of these that the Hebrew physicians appear to have drawn the largest portion of their remedies. To that subject, therefore, I shall dedicate the following pages, reserving some account of the diseases mentioned in the Bible, for a future number of your Reporter. It is said in Scripture that "Solomon spake of trees from the cedar in Libanon, even to the hyssop that springs on the wall;" and by some he is supposed even to have composed a work on botany, which is alluded to by Arabian writers; but if such a work had been seen by any Arabian writer, it is difficult to conceive that, though the work itself were lost, no part of its contents, no extract, should have been preserved; at any rate, if it ever existed, it has shared the fate of many other of that Monarch's compositions, to the great regret of naturalists of all succeeding ages. In the Song which bears his name, he seems to have selected from the vegetable kingdom, some of its richest productions,* to illustrate, by comparison, the beauty of his royal bride. Sometimes, indeed, the royal naturalist shews his acquaintance with the physical properties of bodies. In Prov. xxv. 20, he compares the singing of songs to a heavy heart, to the action of vinegar on natron, (not nitre, as our translation has it,) and this, as far as I know, is the first record of the difference between an acid and an alkali. In another place, when he would paint an emblem of avarice, he says, "the horse leech has two daughters, give, give." In the last chapter of Ecclesiastes his portraiture of old age is not less physiologically correct, than poetically sublime. What can be more beautifully figurative of the decay of the different functions of life, than the metaphorical language of that chapter, especially the following, "or even the silver cord be loosed, or the golden bowl be broken, or the pitcher be broken at the fountain, or the wheel broken at the cistern?" Every intelligent reader knows that this verse is anatomically descriptive of the approach of death, and that the silver cord here spoken of is the medulla spinalis; and by the golden bowl we are to understand, the cranium with its brainular contents, broken or bereft of its functions. Neither can there be much doubt, but that the pitcher broken

* Among others, he enumerates the spikenard, myrrh, camphire, cedar, the rose of Sharon, lily of the valley, the apple tree, the fig tree, the vine, &c. The frequent recurrence of metaphorical expressions to natural objects, and particularly to plants and trees, is so characteristic of the Hebrew poetry, that it might be almost called the *botanical poetry*. In the Sacred Scriptures there are upwards of 250 botanical terms, which none use so frequently as the poets.

Michaelis' note upon Lowth, sec. vi.

at the fountain, represents the heart. Plato calls the heart πηγην του περιφερομενου σφοδρως αιματος the fountain of the briskly circulating blood, and πηγη is the very word the Seventy use for the Hebrew word translated fountain.

The heart, the liver, and the kidnies, have each been supposed to be signified by the wheel broken at the cistern, but, after all the ingenuity exercised to make good the claim of each of these viscera, may it not mean the aortal curvature, which receives and transmits the blood to every part of the body? Whatever be the true solution of this point, there is every thing in this verse to shew that Solomon, either from the animals slain in sacrifices, or other sources, was not ignorant of the general anatomy of the human body, and perhaps of the nature of some of its more important functions.

In short, the whole of the sacred volume abounds with illustrations borrowed from natural history, and the beauty, and sometimes even the meaning, of passages, is obscured by the erroneous medium through which we view them. The English names employed in our translation are occasionally incorrect, being given at a time when a knowledge of ancient natural history, and particularly of oriental botany, was more imperfect than it now is; and even now we find much diversity of opinion in the accounts of modern travellers, who have investigated the natural history of Palestine. For my own part, I cannot see how it is possible to write the natural history of any country from ocular inspection, without residing in it during every season of the year, for every season has its botanical productions. Bruce, indeed, says, that in describing the plants, &c. which he saw in his travels, he made it a constant rule to give the preference to such of each kind as are mentioned in Scripture, and he has certainly added much to our stores of knowledge; but still it is to be desired that some competent traveller, with a greater knowledge of oriental languages, and especially of the Hebrew, than falls to the lot of travellers in general, should first qualify himself by an acquaintance with every branch of natural history, before he commences the task. And after all, unless he is prepared to protract the period of his residence in the Holy Land to some years' duration, he will have to rely upon others for much of his information.

Much was to be expected from the early writings of the Arabian physicians, but such authors of that nation, as are now extant, have afforded but little light upon the subject; and even that little, it is affirmed, has been borrowed from the Greeks. It is highly probable that, at the taking of Alexandria by the Saracens, a new era arose in the medical literature of the Arabians, and that many very valuable remedies were introduced into the medical practice of that country. Still it is quite evident, that many of the names of plants in use among the Arabs of the present day, are not of Grecian, but of Hebrew origin. A constant intercourse has existed in all ages, betwixt the two contiguous

territories of Arabia and Palestine, and the Arabian language probably more nearly approached to a dialect of the Hebrew in ancient times than it now does. In those days the names of plants bore a great similarity in both languages. Even at the present day, the resemblance is still to be traced.* Take, for instance, a few examples which I have selected from different works, out of many others.

Hebrew.	*Arab.*	*Latin.*
Taphuah,	Tyffah,	Pyrus Malus.
Oren,	Aran,	Ornus.
Shoreh,	Shair,	Hordeum.
Phul,	Phoulon,	Faba.
Erez,	Ers,	Cedrus.
Arabim,	Orebim,	Salix.
Cammon,	Kimmun,	Cumminum.
Teenah,	Tijn,	Ficus.
Berosh,	Beraiet,	Pinus Abies.
Lutz,	Luz,	Amygdalus.
Esob,	Suph,	Hyssopus.
Rothem,	Ratam,	Juniperus.
Nard,	Nard,	Nardus.

Can there be a question that these Arabian plants derive their names from a Hebrew origin, and that before the many revolutions which Arabia has sustained both in her civilization and language, this similarity was much greater. It is true, in after times, the Arabian physicians were in the habit of studying and borrowing from Greek writers, but from whom did the Greeks borrow many of their remedies? We have the authority of Herodotus for stating that the Greeks learned the name κιννάμωμον from the Phœnicians, the neighbours of the Jews; and we know that a great proportion of the aromatics in use by the Greek physicians, such as cassia, myrrha, olibanum, galbanum, aloe, &c. came from the East. And as the East was the cradle of the arts and sciences, it is not improbable that the art of medicine not only began, but was carried to a higher pitch there in the primitive ages of the world, than can be proved by existing documents. The works of the Greek physicians have had the good fortune to reach our age, and we know how prone that nation was to extol their own merits at the expense of others. Had any of the works of Jewish physicians been preserved to our day, the respective pretensions of the two might have been placed on a different basis.† One feature in Biblical, as well as

* Many of the pharmaceutical terms still employed, are of Arabian origin, e. g. alcohol, naptha, camphor, julep, syrup, &c.

† Solomon says, of writing books, there is no end. It is hardly conceivable, that amidst such a profusion of books, there should not have been the usual proportion on the subject of the healing art.

oriental botany in general, is the profusion of spicy drugs, which, indeed, are indigenous in eastern countries; and with that wonderful concinnity which pervades the works of creation, these productions are admirably adapted to the wants and diseases of the inhabitants.* It is probable that many aromatics mentioned in Scripture, were brought from the neighbouring countries. Indeed, we find it stated that the Arabian merchants, who bought Joseph, were laden with spices, balm and myrrh, from Gilead. What this balm of Gilead was, whether the balsamum so much celebrated by Pliny, Tacitus, and others, for its medicinal virtues, and said to be the product of Judæa only; or whether it is the resin of the Terebinthus, as Bochart maintains, or some other oily resinous substance, is not quite satisfactorily decided. It is, however, frequently mentioned in Scripture, and that its sanative properties were held in no mean estimation, is clear from the passage, "Is there no balm in Gilead, is there no physician there?" The baalshemen or balsam tree, brought by the queen of Sheba, (according to Josephus,) as a present to Solomon, who was celebrated for his collection of exotics, is by some thought to have produced the balm of Gilead. That it did, indeed, grow in the native country of the queen of Sheba, there is every reason to believe from the authority of Strabo, who says, "In that most happy land of the Sabæans, grow the frankincense, myrrh, and cinnamom; and in the coast that is about Saba, the balsam also." If, however, this balsam is the same as that brought from Gilead in Judæa, by the merchants who bought Joseph, then it is clear that Josephus is wrong in saying that it was first introduced into Palestine by the queen of Sheba; at any rate, we find no such plant described by modern travellers in the Holy Land, as in all respects coincides with the Scriptural balm of Gilead.

The aloe, also, is another of those drugs used as a perfume, and for embalming the dead. From it was extracted the gum used in medicine. The lign-aloes is described by Calmet as about 8 or 10 feet high, having under the bark three sorts of wood. The last or odoriferous portion, is esteemed in the east more precious than gold. It is also said to be at present, and probably was, in remote ages, used medicinally in the same manner as other aromatics. In the list of odoriferous herbs, which have divided the opinions of learned naturalists, is the Hebrew dudaim, which in our version is translated mandrakes; and, indeed, this appears to me a much more likely plant than lilies, jasmins, lote tree, violets, &c. each of which has been, by different authors, supposed to be the true interpretation of the flowers gathered

* Various passages allude to the use of plants and herbs in the cure of diseases. Ezekiel speaks of trees, of which the fruit shall be for meat, and the *leaf thereof for medicine.* In Proverbs, the herbs of the mountain are gathered. xxvii. 25.

by Reuben. The dudaim gives a smell, says the Song of Solomon, whose authority is the best that could be had on this subject. But it is to the fruit, rather than the flowers, that the smell appertains, and it is the fruit which, among the Greeks and Romans, as well as among the Jews, was supposed to possess a virtue to remove sterility. One of the titles of Venus was Mandragoritis, and the emperor Julian, in his epistle to Calixenes, says that he drinks the juice of mandrakes, to act as a philter. Dioscorides, too, before his time, says of the root, δοκει η ριζα φιλτρων ειναι ποιητικη. Even in our day, a superstitious importance is attached to this plant in some countries, though its general use has long since been exploded. Another of the vegetable products familiar to every reader of Scripture, is manna. We are told by Seetzen and Burckhardt, that manna is a natural production, which distills from the tamarisk, in the month of June, and that the Arabs still collect it, and continue to call it mann. But it is important always to bear in mind, that the quantity so collected, is very small in any year. But as the learned Dr. Harris has observed, in his late most useful work,* this kind of manna is purgative, and the stomach could not endure it in such quantity as is implied by its being eaten for food. In short, he adds, (what indeed must be obvious to all,) the whole history of giving manna is miraculous, not merely that it should fall in such immense quantities as to supply so large a host, but that the supply should take place at stated times, just when it was most wanted. It is compared, in the Mosaic account, to coriander seed in shape, and to bdellium in colour.

But, perhaps, of all aromatic plants mentioned in Scripture, the nard was considered the most precious. It formed the basis of an ointment very costly and odoriferous. It is twice named in the Song of Solomon, and two varieties of it, (one Arabian and the other Indian,) supposed to be intended. Dioscorides also distinguishes the "nardus Syriaca" from the "Indica." In the opinion of the best commentators, it was the latter of these that was poured on the head of our Saviour, who is thought to have had in view the remoteness of the country of its production, in that most striking passage, "Wheresoever this Gospel shall be preached," &c.

The mur of the Old Testament, and σμυρνα of the New, is our myrrh, which is still, as then, imported into other countries from the coast of Arabia. We know that this drug formed part of the

* I had prepared a list of the Hebrew names of plants mentioned in the Bible, with a view to its insertion in this place, but on lately perusing the work I have above alluded to, this task has been so much more ably performed, that I cannot do better than refer my readers to it, not only for information in this particular, but in every point relating to the natural history of the Bible. I have derived the most important assistance from it, in this branch of my subject, and recommend it to the perusal of every biblical student.

most costly ointments, and was probably then, as now, used medicinally. It formed part of the present made by the Magi at the birth of our Saviour, and wine mingled with myrrh was offered to him at the crucifixion. If the οινος εσμυρνισμενος was given, as some commentators maintain, to blunt the pangs of dissolution, it was, at any rate, rejected by our Lord, and would furnish a strong argument against the too general practice of resorting to stupefactive remedies, to lull the agonies of death. But, on the other hand, it is thought by most, that nothing more was intended than a bitter draught of some kind, offered by the Roman Soldiery in mockery to his sufferings. The similarity of mar, (which signifies gall,) to mur, myrrh, in the Hebrew language, may serve to reconcile any apparent discrepance.

It is well known that frequent mention is made both in the Old and New Testament, of hyssop. From the accounts of modern travellers, it seems to have been a smaller than our common species of hyssop. It had its Hebrew name from its supposed detersive properties, (vide Parkhurst's Hebrew Lexicon,) and was used in sprinkling the blood of the paschal lamb. Its use at the Crucifixion is considered as typical of the purifying virtue of the sufferings of Christ. Its medical virtues, however, do not appear to be highly appreciated at the present day. It is oftener used in cases of pectoral affections, than in any other class of diseases. The cassia of the Bible, is the kiddah of the Hebrews. The same is mentioned also by heathen writers, Herodotus and Pliny, who acknowledge that they received it, as well as myrrh and cinnamon, *from the East.**

Of the other aromatics recorded in the sacred volume, the history is familiar to your readers. The ανηθον (in Matthew xxiii. 23,) is not, as our translation has it, anise, but dill, which seems to have been used as an ingredient in medical compounds of former ages, as well as in our time. So have both mint and cummin; (vide Celsus.) Of the camphire, the cane and galbanum, the first is described by Mr. Harmer in his commentary on Solomon's Song; the second is supposed to have been one of those plants presented by the queen of Sheba to Solomon, and probably cultivated in Judæa, as Theophrastus says that it grew near Mount Libanus. The galbanum, a Syrian plant, was an ingredient in the holy incense of the Jews, and as we know that other nations of antiquity used it very extensively in medicine, it may

* Josephus' strange account of the root baaras, was probably derived from the Magicians. He says, "its colour is like that of flame, and towards the evening it sends out a certain ray like lightning, and that it is certain death to those that touch it, unless any one take and hang the root itself down from his hand, and so carry it away; or they tie a dog to it, and when the dog tries to follow him that tied him, this root is easily plucked, but the dog dies immediately, nor after this need any one be afraid of taking it into their hands. If it be brought to sick persons, it drives away all demons!!" Vide Joseph, lib. vii. 3.

fairly be presumed that its virtues in this respect were not unknown in Judæa. The Hebrew word rush or rash, was intended to denote some poisonous and perhaps bitter herb, and it is joined in some passages with wormwood. Can it be the same as is mentioned in this passage of Celsus, "Tum ipsa ulcera perunguenda sunt melle, cui *rhus, quem Syriacum vocant,* aut amaræ nuces adjectæ sunt.*

The bitter herbs with which the Jews were commanded to keep their passover, are not specifically named in Scripture, but the Jewish writers reckon five species, which are supposed to be the tansy, chamomile, taraxacum, wild lettuce, and centaury. But as no precise directions are given on this point, it is probable that others were used with a similar intention. The typical tendency of this injunction is familiar to all, and it is certain that such a practice must, in many instances, have proved highly conducive to the preservation of their health.

Fearful of having encroached too largely on your pages, on a subject which, however interesting to the biblical student, may possess less attractive features to the professional reader, I shall, at present, content myself with having enumerated some of the principal plants recorded in Scripture. A much larger space than could be allowed, would be requisite to comprise the whole. We unfortunately possess no ancient documents to shew how far these Scriptural plants and herbs were made available for medical purposes, but that many of them were so used, we have the evidence of the Scriptures, along with that of Josephus and other ancient writers. We find, indeed, but incidental allusions, but still they establish the fact; all that we want is a more circumstantial detail. When I find, too, in Greek and Roman writers, allusions to Jewish and Arabian medical practice, I cannot but regard that as another unexceptionable testimony of the advanced state of our art among the Jews. Two Jewish and one Arabian formula are given in Celsus alone. Indeed, the vitiligo of that author is so similar in its threefold division, to the *berat* of the Levitical leprosy, that it is almost difficult to believe that Celsus† was ignorant of the Mosaic description. But on this point, as well as on other diseases mentioned in Scripture, it will be more in place to speak on some future occasion, if, indeed, I have not already trespassed too largely on those pages, which should, I admit, be restricted, as much as possible, to subjects of a more practical nature.

* Vide Cels. lib. 6, cap. xi.

† As a specimen of Arabian practice in the days of Celsus, the Arabian composition for an application, "ad strumam et phymata," is as follows: "Habet myrrhæ, salis ammoniaci, thuris, resinæ et liquidæ et aridæ, crocomagmatis, ceræ, singulorum, p. i. lapidis ejus quem πυριτην vocant p. iv. quibus adjiciunt Sulphuris, p. ii." For the two Jewish formulas, vide Cels. lib. v. page 263-73.

ARTICLE II.

On Prophylactics, or the Prevention of Disease.

BY RICHARD JONES, M. D., KIDDERMINSTER.

[CONTINUED FROM PAGE 29.]

Prophylaxis of the Diseases of the Nervous System.

The nervous structure is as generally spread through the body as the vascular, and to the physiologist, is probably even more important, since to it is referred the animal sensibility, while it also stands in the relation of cause to the animal motions.

Of the relation of the nerves with those two systems, which we have spoken of above, it may be said, that while the skin and mucous membranes form the medium by which external objects affect the functions, so, the nerves being stimulated, rule the contractile powers of the vessels, and of all other parts, according to their several functions.

All nerves communicate with the base of the brain, either immediately, or intermediately, through others, and this may consequently be considered as the great nervous centre of the body; whilst the upper parts of the brain are devoted to intellectual purposes, and in a state of health, are incapable of sensation, such as is commonly found in other parts of the nervous structure. The nervous substance is well supplied with blood, and nature has been so careful of this, that it might immediately be taken for granted that its presence was of great importance. Accordingly, it appears to me beyond all manner of doubt, that the blood performs the part of a natural irritant to the nervous tissue, to awaken it to that full capability of exertion which may be called the *attention of the part.*

Swooning is the emptiness of the blood-vessels of the head; an habitual determination of blood to the head, and even apoplexy, result from unmitigated exertion of the intellectual portions of the brain; depletion reduces the nervous vigour of the whole body; when the blood is injured or imperfectly elaborated, we find a proportionate dullness of the nervous powers.

This preliminary being settled, we are prepared to account for many nervous disorders; and for their frequency generally in man compared with the brute creation; and we may also discern the prophylactic measures that are to oppose them.

Determination of blood, and its effects, are the most frequent causes of disease in the head. This also may arise from two causes. Either from excessive exertion, and constant attention of the intellectual parts, whereby the fluids are attracted unremittingly, and unduly, or from a general fullness of habit, whereby the blood comes to be sent with great force and in great abundance to the head, espeeially in persons who have short necks and large and powerful hearts.

A fulness of the head may also be caused by an imperfect reduction of the blood through the veins, either from weakness, or any other retarding cause.

The first kind of plethora often ends in the rupture of a blood vessel, or in inflammation; the second is likely to end in an effusion of the watery particles of the blood, through the small vessels, producing a kind of dropsy.

Whenever the whole system is weak, the veins are more likely to perform their functions imperfectly than the arteries, because they depend more upon the aid of other parts, particularly the muscles, for the propulsion of their contents, which, when they do not receive, and force along with due vigour, a part is likely to be effused into some part obvious to its reception, which is generally a cavity secreting that simple fluid, the watery part of the blood. For this reason, persons in extreme weakness are most liable to dropsy, as well of other parts, as of the brain.

True apoplexy is a very prevalent disease, and sufficiently well known. In this disorder there is a pressure on the brain, by which the animal comes to lose consciousness and voluntary motion; or, as it has been well expressed, the animal functions are destroyed, whilst the merely vital offices are not necessarily so, though all life may be at once annihilated, if the shock be sufficiently violent on the great nervous centre.

It is well known that nervous substance resists pressure in a very remarkable degree, insomuch so, that it rather bursts the containing vessel, than yields to compressing force; and hence a small quantity of blood beyond a certain point, will influence the brain with a very equal and considerable force, insomuch that when this point is attained, by all the vessels being fully injected, any violent cause of determination may produce immoderate, and perhaps deadly, pressure on the nervous substance. Generally, some blood vessel bursts, and if the base of the brain be sufficiently compressed, death ensues.

From this statement, the great points of prophylaxis may be inferred.

We must endeavour to break through that habit, by which the least stimulation of the brain brings it into that relation with the circulation, which, I have shewn to be its *attention;* and hence, excessive study on one train of objects, and all vivid perceptions, are to be shunned, by keeping the intellectual sense as calm as possible.

But without earnest attention, or internal reflexion, the supply of blood may be too great to the head, for general plethora is likely to implicate the head also.

When the habit of plethora is established in the head, then any circumstance that destroys the balance of the circulation by obstruction, in any other part, will tend to produce a fullness of the head; hence, exposure to cold must be avoided, since so, a portion of blood may be repelled from the particular organ exposed. But extreme heat is no less likely to produce apoplexy,

under these circumstances, by directly urging the blood towards the head; nor is violent exercise to be forgotten, as liable to produce the same effect.

Disorders of the liver and lungs, or of any important viscus, may, when the habit of plethora in the head is formed, excite apoplexy, or render the subject more prone to it by disturbing the balance of the circulation. Tight neck-cloths, stooping, and excessive repletion of the stomach and bowels, are also obviously to be avoided.

Generally, it may be taken for granted, that palsy is to be prevented by the same means.

These measures will also be found to prevent inflammations of the brain, although those who have understood the essay on inflammations, will at once perceive that congestion and inflammation are independent of plethora, though no doubt, in certain cases, they may be induced by it. The prophylaxis of this inflammation is not different from that of others, the object being to avoid collapse, and all exertion that may lead to it.

The premonitory symptoms of sanguineous apoplexy are, drowsiness, confusion of intellect, vacant expression, flushed face, numbness of several parts; or if the shock be violent, a pallid and livid countenance, with palpitation of the heart, giddiness, sickness, sometimes a violent pain in the bowels, all, or none of these, may be present; but they should be kept in mind that assistance may be called for.

Inflammation of the brain is ushered in by restlessness, an unmeaning countenance, frowning, fierce or squinting eyes. The vessels of the head beat strongly; the pupil of the eye is contracted, and light gives uneasiness. There is also deep-seated pain in the head.

But of all nervous diseases, perhaps, that which is called the acute dropsy of the brain is most insidious, and most frequently mistaken, especially as it occurs more frequently in children, too young to give much account of their feelings.

This disease, though generally spoken of as a dropsy, is, in reality, an inflammation of the brain, chiefly of the delicate membrane lining its internal parts, and terminating in an effusion of the watery part of the blood. I have constantly observed that children attacked with this inflammation, are remarkable for having been exceedingly acute, in an intellectual point of view, previously. They generally, too, possess large heads. But this acuteness and sagacity, I attribute to a preternatural excitement of the brain, which, by original conformation, is too readily predisposed to a continual state of *attention*. When this is the case, and parents, ignorantly proud of the abilities of their child, endeavour, as much as possible, to push, instead of restraining, the exertions of the mind; then, any fresh excitement, as that by sympathy, from disordered stomach and bowels, or direct intellectual exertion, produces a greater influx of blood to the head pre-disposed to congestion, by the great exertion that it has

undergone, the internal membrane becomes inflamed; and, as is often the case with membranes of its character, the effusion of the watery part of the blood supervenes.

It is, therefore, an essential point of prophylaxis in this case, that the child should be watched over, and prevented from that undue exertion, which, while it leads to a collapse favourable to congestion, induces, also, a habit of local plethora. On the same account, we perceive how injurious stimulating drink and food must be, whenever a child is predisposed to this complaint. The disease is ushered in by fretfulness, and unwillingness to be disturbed. Contraction of the brows, while, during drowsiness, the arm is thrown over the forehead; the pupil is contracted, and the eye has a sinister expression. Suddenly, it starts, or screams out; and almost constantly, *the evacuations are dark, very fœtid, and have an oily appearance.*

This disorder differs from a true dropsy of the brain, by being a termination of inflammation; and the preventative measures are not less opposite in kind. Chronic water in the head occurring in ricketty and weakly children, is to be treated by certain stimulants, and by supporting the constitution generally, but, to enter fully into this subject, would be out of place here.

Important as are the diseases we have just been contemplating, yet those of the spinal marrow demand our attention no less. Some knowledge of their nature is very desirable, for they are not, for the most part, so obvious as the diseases of the head, until the mischief is irremediable; and here, as in many cases, the best means of prophylaxis is to learn when to send for the physician.

Inflammation of the spinal marrow is, as far as I am aware, often mistaken for a common rheumatic affection, and so treated, until the fatal effusion takes place, which causes irremediable paralysis of the lower half of the body, when it is called by a different name, and it is declared that the patient suffers under a *rheumatic palsy.*

Inflammation of the marrow not unfrequently arises from some disease in the bony case. This advances rather slowly, with but slight loss of power of the lower extremities, and must be ascertained by a careful examination of the spine, to see if there be any tenderness in its course. This might be done whenever a child drags its limbs along the ground, or appears otherwise weak in the lower extremity.

The *idiopathic* inflammation of the spine is not of such common occurrence; nor do we find it by any means so prevalent as disease of the head, since the spinal marrow is not subject to all the intellective stimuli of social life. The disease in question only occurs in people pre-disposed, either by nature or acquired causes, to nervous disease, such as excessive drinking, exposure to metallic fumes, and the like. The patient invariably mistakes the attack for one of rheumatism. The pain in the lower extremities is most excruciating in most cases, and the disease comes

on after cold. In the first place, during the stage of congestion, the limbs are benumbed, and the pain, if there be any, is dull and oppressive; it is also diffuse, and not confined to the joints. But, when the re-action commences, the pain is very much greater, till effusion takes place, when the anguish subsides, and the palsy, if not before complete, is now at its worst. If any one experience these symptoms in himself, or others, assistance should be promptly obtained, or the sufferer will be a cripple for life. Many of the symptoms common to nervous disorders, are present, as spasms, delirium, and oily evacuations, although not always, nor at all stages of the complaint.

The prophylaxis is reduced to the general principles before laid down. What intellectual exertion does to the head, such, any irritation influencing the nerves of the spine, will do for that nervous body, as exposure to poisonous vapours, excessive debauchery, and the like, tending to favour not only collapse, but a local plethora.

These are the most obvious practical observations of nervous diseases, and though the subject might be carried to a great length, yet probably the priciples may be understood and applied by each to his individual circumstances, even from this short notice.

Of the Prophylaxis of disease at different periods of life, and of some diseases not falling under the preceding heads.

Before we can understand the principles of the prophylaxis of diseases incident to particular periods of life, it is proper that we should, in some degree, be made acquainted with the nature of the changes that occur to the constitution in general, and knowing, then, the principles by which diseases, modified by these causes, are to be prevented, will be deducible. For this purpose we may divide life into infancy, youth, maturity, and old age.

In infancy, which is the most active period of life, on the whole, diseases are numerous in proportion; and their nature is determined by that of the functions most especially concerned. Above all others, the digestive and assimilating organs are together greatly engaged in the fulfilment of the natural growth of the body. For a like reason also, since the blood is the source whence all the substances proper to the body are derived, the vascular system is likely to be preponderant, and we actually find that it is so, though, from its continual exhaustion, and from the simple mode of life of infants, disorder does not so frequently originate here as in some other functions, especially the skin and mucous membranes, which, it will be seen, are peculiarly exposed to disorder at this period of life. But infancy is no less the period of mental developement, than of bodily growth. At this time of life, the being has to become acquainted with sensations of all kinds, both singly in its distinct organs, and in those elaborate combinations which are bound by association into what we term material objects. The observant eye must perceive the

extent of labour by which a child in the cradle, after many trials, becomes acquainted with that compound feeling of muscular motion and simple touch, which is afterwards so permanently bound up in the idea of solidity. This is a great effort, and then afterwards multitudes of objects are discerned, and eventually their relations. For these reasons, the nervous system is likely to be unduly exercised even in infancy ; and when we consider that nerves regulate secretion and excretion, we may perceive how very liable the whole must be to become impaired by disease, or how often the nerves, as well as the mucous membranes, may become the first springs of evil.

At the same time, under these modified circumstances, children, besides having peculiar complaints, are liable to those which affect the adult, to a very considerable extent.

As all external causes may be considered in the light of stimuli to the vital powers, they may be treated of as excessive, deficient, or improper, in their very nature.

I have before shewn how excessive mental stimuli may lead to water in the head, and, in the chapter on mucous membranes, I explained that truly nervous dyspepsy, which, arising from the same cause, may derange the bodily health of infants to a considerable degree, as well as of adults. But infants are not capable of those lengthened emotions that influence the mass of blood permanently, both because the mind is immature, and because the blood-vessels are actively employed in the work of nutrition. It is on the nervous substance of infants, therefore, actively engaged as it is, that the excessive mental stimulation is apt to fall most injuriously, when in adults, the heart and vital functions might have borne the weight.

In almost all cases, children are restricted to that aliment which nature has proved to be most wholesome, and simplicity is a general quality of their food. The most obvious way in which disease arises in children, is not therefore directly from the dyspepsia of the stomach and bowels, as in adults, but primarily from a destruction of the balance between the stomach and bowels, and their contents, with the organs that finish the elaboration of the fluids, such as those called the *mesenteric glands.* Hence, excessive repletion is a cause of disease in all functions, especially as, when all the energies are exhausted by the stomach being thus oppressed, other processes cannot be excited with due vigour. But from the same principles it may be seen, that an undue quantity of food is not more injurious to the child, than the practice of giving the most nutritious food that can be devised, even in a smaller compass ; by which means, certain vessels are over-worked, and at length produced the very effects which the parents are most anxious to avoid, such as consumption, and that species of waste depending on weakness or obstruction of the glands, called *mesenteric,* which separate the chyle from the alimentary canal, and eventually form it into the mass of blood.

As a general rule, we may be assured that infants have a kind of instinct which the complexity of social life overwhelms in the adult. We are not, therefore, to force them into a prematurely artificial existence, by making use of our reason too exclusively, to the neglect of the hints afforded by the instinct of the child. Facts connected with the adult state, are not necessarily just, when extended to the peculiarities of infancy.

Infancy may be said to close about that period when the mind is so far advanced as to begin the work of abstraction and generalization for itself; and in the period of youth, which immediately follows, there is no remarkable object of prophylaxis which is not explained in some part of this essay. At the close of youth, however, the most important circumstance of life, whether we consider it corporeally or mentally, takes place.

Animals of the brute kind, and uncivilized beings, unrestrained by any propriety, and impelled by natural instinct, are not subject to those disorders which so frequently assail us at the close of youth. But at this period, the sensibilities of several organs begin to be changed, and augmented, and a new distribution of the fluids is experienced. Those which before were employed in the offices of growth, must be diverted to some part of the body, and the organs to which they are determined, are such where a high degree of sensibility predominates. In robust constitutions, even without those measures which society totally disallows, the fluids are concentrated at their proper organs, which are endued with their natural sensibility; but in other instances, by far too numerous, the fluids are determined to some debilitated organ; a morbid sensibility and misplaced plethora occur, and consumptions and diseases of many kinds inevitably result.

Those who are acquainted with the economy of the brute creation, must have observed the modes which nature has fixed to determine this point. And we are to imitate her as much as possible, for however we may be inclined to regard nature as something which we may control at our pleasure, or which we ought to crush and abhor, yet it will be found that, when she is most obedient even, to our little whimsical government, she is, in most cases, most completely avenged.

Under all circumstances, we recommend those amusements and exercises which are most calculated to produce the desired effect, such as dancing, riding, and many others, which have uses probably, most important, though seldom considered.

When we arrive at maturity, the fluids naturally change that course which they held whilst supplying the demands of growth, and ministering to other functions of which we have been speaking, and hence, instead of the nerves and mucous membranes, the vascular system is that in which disease most decidedly shows itself. The internal organs, therefore, suffer, and congestions of the liver, stomach, bowels and lungs, are to be apprehended.

During maturity, however, there is one point which more

particularly demands our attention. At this period, the passions are not only more intense, but more enduring than at any other, and this is the time when external circumstances of love, or of various kinds of ambition, or avarice, call them into play. Attendant upon these, are protracted cares and disappointed hope, so that the stormy period of life commences when the circulation is freed of its great offices of growth, and does not finish until vessels become languid from age. It will hardly be doubted that, however necessary the nerves may be to mental functions, yet, impressions on them, cannot fail to affect the vascular system, and to produce in it a violent re-action. For this reason, sudden emotions, acting no doubt primarily on the nerves, produce fainting and breathlessness, amounting even to asphyxia, and long continued stimulation produces feverishness. Thus the heart and lungs are directly affected by the stronger emotions, as the natural functions are by nervous irritation, a circumstance which we have dwelt on, when treating of indigestion; and, when we add as causes, those exertions which the passions lead us to make, we may see how, at this period of life, disease of the heart and lungs is often aggravated, or called forth. We too often see the intellect still vigorous, whilst the lungs give way under that great vascular excitement which has been caused by the cares first perceived by the brain. In mature life, therefore, we have to remember that the influence of the emotions on the vascular system, now full of blood, (not drawn off for the supplies of new parts,) predisposes the body to disorders of the lungs and large vessels, and the great receptacles of blood of all kinds, to disturbance.

Through all these circumstances, however, it is the lot of some to arrive at that period of life when the body naturally bends to decay, and before which the seeds of disease and of death have long been sown. In age, disease is more passive than violent, and as the sober mind and decrepid body generally suit each other, the causes of disease are less numerous. The two great circumstances of decay, and of injury from previous causes, cannot by any means be prevented, and therefore old age does not offer much of interest to our present treatise. It may suffice to say that the best means of ensuring a comfortable old age, is to pass a prudent and quiet course during youth and maturity.

ARTICLE III.

CHELTENHAM HOSPITAL.

A Case of Fever with Typhous Symptoms; with some Remarks on the theory and treatment of Fever.

BY JAMES M'C CABE, M. D.

But few medical cases have been yet treated in the hospital establishment connected with the Cheltenham dispensary. The following case of fever, however, on account of the severity of the symptoms attending it, was received into, and treated as an in-patient in the hospital.

Elizabeth Goodman, æt. 25, was admitted an in-patient on the evening of August 14, 1829, under the care of Dr. M'c Cabe. The prescription book contains the following remarks, and the following treatment of the case.

"This is probably a case of typhus fever, and, from the present symptoms, appears likely to be a dangerous one. Pulse above 119; heat 100; great anxiety and agitation. The eye and manner indicate the approach of delirium; the attendant, indeed, states that she has been delirious during the night. I find that she has been ill about a week, and that this day may be reckoned the seventh day of the fever. I find also that she was brought here three days ago as a dispensary patient; that the case was marked "fever" in the prescription book, and that bleeding and aperient medicines were then directed; since then, she has been under the care of the medical attendant of the family in which she lives as house maid, until this evening, when, the symptoms becoming alarming, application was made for her admission into the hospital.

℞ submuriatis hyd. gr. iij. pulv. Jacobi gr. iv. fiat pilula statim sumenda, et cras primo mane capiat olei ricini ℥i. Barley water acidulated with lemon juice, to be given frequently, and the temples to be frequently sponged with vinegar and water.

15th.—Had some disturbed sleep during the night. Pulse frequent and tremulous; heat of the body rather diminished. The medicines have operated frequently, and brought away a considerable quantity of fetid fœces. ℞ misturæ camphoræ ℥ij. Liquor. ammoniæ acetatis ℥ij. Vini antimonii tartarizati, ♏xx. Syrup. pap. somnif. ℥i. M. capiat coch. ij. ampla 2dâ quâque horâ. ℞ submuriat. hyd. et pulv. Jacobi aa. gr. iij. fiat pilula horâ 8vâ vespertinâ sumenda.

16th.—Appears much worse this morning. Pulse above 120; heat as yesterday; eyes heavy and glassy, and with every indication of approaching coma. She has been delirious during the night. In the foregoing reports, I find that I have omitted to mention the state of the tongue; on the first day of admission, a brown streak was observable along the centre, which had increased yesterday, and is much worse to-day, being brown and dry; the teeth and gums also are covered with dark sordes. The bowels have been opened by castor oil this morning. Applicetur nuchæ colli emplastrum cantharidis. ℞ submuriatis hyd. gr. ix. M. fiant pilulæ duæ, capiat unam statim et alteram post horas tres; continuetur mistura. Arrow root and sago, and thin gruel, varied, as she may prefer the one or the other, to be given every two hours. Barley water, acidulated with lemon juice, for common drink. Vespere. Much the same as in the morning. Tongue and teeth deeply covered with dark sordes; pulse indicative of subsultus. Applicentur temporibus hirudines xii. ℞ pulv. Jacobi gr. iij. Extracti hyosciami gr. i. ammoniæ carbonatis gr. iv. fiant pilulæ duæ, statim, post hirudinum applicationem, sumendæ; ℥ss olei ricini cras primo mane sumend. A

cup of weak tea, should she wish for it or like it; arrow root and gruel to be given as before, at short intervals.

17th.—Pulse 115; heat 98; tongue probably less coated; eyes glassy. Has taken the castor oil as directed, but the stomach rejected it. ℞ enemat. communis lb.ss. muriatis sodæ ʒij. olei oliv. ℥i. tincturæ assafœtidæ ʒij. M. fiat enema statim injiciendum. ℞ carbonat. potassæ ʒij. aquæ ℥vi. sacchari ʒij. tincturæ opii ♏xx. fiat mistura cujus capiat coch. ij. ampla cum uno succi limonis in statu effervescentiæ 2dâ quâque horâ. Vespere. There is scarcely any perceptible change in the symptoms. The enema has operated freely, and carried off a quantity of fetid fœces. ℞ liquoris ammoniæ acetatis et misturæ camphoræ aa. ℥ij. tincturæ hyosciami et syrupæ pap. somnif. aa. ʒi. M. capiat dimidium statim et residuum nocte durante. Tea, arrow root, and gruel, frequently, without waiting for the patient to ask for or require them.

18th.—Has had some sleep during the night, and on the whole appears rather better this morning. ℞ misturæ camphoræ ℥vi. liquor. ammoniæ acetatis ℥ij. syrup. pap. somnif. ʒij. spiritus ætheris nitros. ʒss. M. capiat coch. ij. ampla 2dâ quâque horâ. Vespere. Heavy and comatose. Pulse small, tremulous and spasmodic; the appearance of the tongue is favourable notwithstanding. ℞ submuriat. hyd. et pulv. Jacobi aa. gr. iij. fiat pilula statim sumenda; continuetur mistura camphorata. ℞ Infusi sennæ ℥ij. sulphatis magnesiæ ℥ss. tincturæ sennæ ʒi. M. fiat mistura cujus capiat coch. ij ampla 2dâ quâque horâ ad alvi effectum, incipiens cras primo mane. Applicentur plantis pedum cataplasmata sinapeos.

19th.—Has had some disturbed sleep during the night. The medicine has operated freely, and brought away several very fetid dejections. Pulse still 110; heat about the natural standard; tongue moist, and begins to clean about the edges. Upon the whole, she is rather better this morning. Rep. mistura camphorata.

20th.—Has had a good night; pulse under 100. The bowels have not been moved during the night. ℞ pilulæ aloes et myrrh. ʒss. divide in pilulas vi. capiat duas statim et rep. post horas quatuor, si opus sit. Chicken broth, arrow root, and weak tea.

21st.—Bowels have been moved; tongue white and furred; in other respects better. Mistura salina cum succo limonis capienda 2dâ quâque horâ. Vespere. Has an increase of fever. ℞ pulv. Jacobi et submuriat. hyd. aa. gr. iij. extract. hyosciami gr. ij. fiat pilula statim sumenda, et cras primo mane capiat olei ricini ℥ss.

22nd.—Has had a good night, and the castor oil has operated three times. Rep. mistura camphorata ut anteâ.

23rd.—Has had a good night, but is at present much flushed, and with some increase of fever. ℞ pulv. Jacobi gr. ij. extract. hyosciami gr. iij. fiant pilulæ duæ, capiat unam statim et alteram horâ 8vâ vespertinâ et cras primo mane olei ricini ℥ss.

24th.—Has had a good night; bowels open; tongue clean; pulse and heat nearly natural. She may now be considered convalescent. ℞ infusi columbæ ℥vi. sulphatis quininæ gr. iij. fiat mistura cujus capiat coch. ij. ampla 3tiâ quâque horâ. Some chicken and wine and water for dinner. From this time she improved rapidly, and was discharged from the hospital perfectly well on the 11th of September.

In the case of fever here detailed, the gastric irritation was very inconsiderable. On the 3rd day after admission, however, the castor oil was rejected by the stomach, and a strong enema was given in its stead. It is probable that the early exhibition of purgative medicines was the reason why so little gastric irritation occurred during its progress. In a case of fever published in a late number of the Lancet, taken from a French medical publication, and in which the patient was a medical student, and the attending physician no less an authority than Broussais himself, the gastric irritation was very remarkable. I cannot now lay my hand on that number of the Lancet, but, if I recollect rightly, no aperient medicines were given throughout the progress of the case, although it was protracted to considerably beyond the twentieth day, and the enemata given were principally of cold water. There are few medical practitioners in this country who, in reading over that case, would not, I think, feel regret at several stages of it, that aperient medicines were not given. The case terminated favourably, but the remarkable words in which it is recorded, would lead to the conclusion, that such a favourable termination is not frequent in such cases. It is introduced in I think the following words. "A case of gastro-enteritis, accompanied with encephalitis, which terminated favourably."

The doctrine or theory of Broussais, which makes fever essentially to consist in abdominal and gastric irritation and inflammation, would necessarily prevent the exhibition of active purgatives. He, therefore, acts consistently with his own theory, in treating fever without purgation. But it cannot be a matter of practical indifference whether fever shall be treated in the one way or the other; and should it be found, on a comparison of the results of these different modes of practice, that the one or the other is the most successful, it ought to be made known to the profession. Few physicians, I believe, in this country, venture to treat typhus or other severe forms of fever without purgatives, therefore we have not data for comparing the two modes of practice; such data can only be obtained from the records of the French hospitals where fevers are treated according to the principles of Broussais. If such data were procured by comparing the ratio of mortality in fevers in the French hospitals, with that which obtains in our own under a different system of treatment, some grounds might be obtained for forming a judgment.

The theory of Dr. Clutterbuck, which assigns a different locality to fever from that of Broussais, and makes it to consist essentially in inflammation of the brain, is favourable to the exhi-

bition of purgative medicines, as all seem to agree in thinking them highly useful and necessary in the treatment of encephalitis. But Dr. Clutterbuck's theory is unfavourable to the exhibition of stimulants, which, however, every practical physician must have found highly useful and indispensably necessary in some stages of fever, particularly in the last stage, when exhaustion and collapse have succeeded high nervous and vascular excitement. All theories of fever must be considered useful or injurious, as they lead to successful or unsuccessful practice, which, after all, can only be judged of by comparison, in the way I have already mentioned.

In the treatment of fever, and, indeed, in the treatment of all diseases, our practice ought, if possible, to be guided by certain and fixed principles. The practitioner who is constantly changing his ground and changing his remedies, is not likely to be a successful one; an experimenter in medicine is a dangerous philosopher. If chance or accident, however, enables us to add to the catalogue of remedies for any disease, a new or more powerful one, or one by which general principles may be better explained or more fully elucidated, we should avail ourselves of the opportunity. In Sir Arthur Brooke Faulkner's able work on the plague, which occurred in Malta, in 1813, he has published the details of nine cases of that formidable disaase, which were treated under his direction and care in the pest hospital of that island. Out of the nine published cases, I find that six proved fatal, and of the three successful ones, I find, by his notes, that a large quantity of spirits of turpentine and camphor, which was intended for an external application to carbuncles, had been given internally by mistake in two of them, and had occasioned a severe hypercatharsis. The following are the words in which Sir Arthur has noticed the cirumstances in his case book:—"On looking accidentally into the hospital-mate's prescription book, I observed that one drachm of camphor, and four ounces of oil of turpentine had been directed for the carbuncle, which, upon enquiry, I found the attendant had administered internally!!* This will fully account for the purging on the 30th and 31st." This case recovered; the other is mentioned in the following words:—

"Die 31.—(Julii 1813.)—Most severely purged in the night. On looking into the prescription book of the hospital-mate, I observed the same application for the carbuncle as ordered for Yaniwicz above; viz. four ounces of oil of turpentine, and one drachm of camphor. Vespere. Continues still much purged, and complains of great griping and uneasiness about the belly.

"Die Augusti 1.—I found the same mistake had been committed as in the case of Yaniwicz, and that the oil of turpentine and camphor had been given internally." This patient also recovered.

Sir Arthur Brooke Faulkner does not appear, in what he has published on the subject of plague, to have drawn any practical

* This word is printed in italics.

conclusions from the remarkable facts which I have here given from his book. That of the three recoveries out of nine cases, two of them should have taken such powerful purgative and stimulant medicines by mistake, appears to me too remarkable a circumstance to be considered merely a coincidence. The inference appears to be that their recovery was owing to the mistake. Although the inference may be admitted, few would choose to give four ounces of spirit of turpentine and a drachm of camphor as a stimulating purgative, although it was successful in these cases; perhaps strong drastic purgatives, such as colocynth, scammony and calomel, with diffusible stimuli, such as æther, camphor, opium and wine, would have answered the purpose, and might be considered the safer; but the great principle which I think these remarkable facts go far to establish, is, that purgation and stimulation are the appropriate remedies for the plagne.

The application of these observatious to fever, must be obvious. Plague is probably nothing more than a form or variety of fever; violent and destructive in proportion to the intensity of the cause. The yellow fever of the West Indies, and of the shores of the Mediterranean, during the prevalence of an epidemic, is often as destructive in its ravages, and as rapid in its progress, as the plague. Of the plague, I have no knowledge from personal observation; but of the yellow fever, I have had much experience, and the practice which was found by far the most successful in the treatment of it, consisted of purgation and the anti-phlogistic regimen in the early stages, taking care to prevent too much exhaustion, by the occasional exhibition of wine camphor and other diffusible stimuli, particularly in the latter stages of the disease; and after some experience of the typhus fever of this climate, I feel convinced that the most successful practice in it also, is that which is guided by the same principles.

ARTICLE IV.

Cases and Observations illustrative of the connection between Bronchial Inflammation and Affections of the Heart.

BY CHARLES HASTINGS, M. D.

WHOEVER reflects on the immediate connection between the functions of the lungs and the heart, must immediately see how improbable it is that either of these organs can long suffer without the functions of the other being more or less disturbed. In this manner an attack of bronchitis must interfere with the actions of the heart, for we cannot but consider the congested state of the lungs, which it necessarily occasions, as calculated to obstruct the current of blood through the right side of the heart, and thus to cause an accumulation there. In this state of things, repeated returns of cough must greatly tend to produce a dilatation of the right ventricle and auricle. In many, no doubt, of these cases, the dilated state of the right cavities of the heart is removed soon

after the congestion of the vessels of the lungs disappears. But this is by no means a constant occurrence, for it is usually observed, for some time after the subsidence of an inflammatory affection of this kind, that the heart is more easily excited, and sometimes its action is irregular, and palpitations are not uncommon. Neither is it a rare thing for bronchial inflammation, by long continuance, to lay the foundation for very serious cardiac disorganization. This extension of diseased action is not confined to the heart itself, for the pericardium is found very frequently to partake of the mischief, and the usual changes of structure that arise in that part from inflammation, as effusion of lymph, serum, or pus, are sometimes observed in conjunction with bronchial disease. But, as is above hinted, it must appear probable, from the construction of the different cavities of the heart, and of its investing membrane, as also from the direct and indirect connection of the action of these parts with that of the lungs, that the right cavities of the heart are more likely to be influenced by the unnatural condition of the lungs, and consequently more prone to fall into a state of disease: for Corvisart well observes, "the parietes of the right auricle being much thinner than those of the other cavities of the heart, are, from this circumstance alone, more subject to unnatural dilatation; but this primary cause is not the only one, and many others, though of a different nature, do not less deserve our attention. The numerous obstacles to the current of the blood, either in the lungs, by the affection of the mucous membrane of this organ, or in some parts of the circulating system, are undoubtedly often the mediate causes of passive dilatation of the right auricle."

Unfortunately our attention, in cases of bronchial inflammation, is not always very much directed to the inconveniences that arise from these secondary disorganizations of the cavities of the heart, until they are become very formidable, for it is by no means uncommon, in chronic cough, to see hydrothorax and general anasarca come on, ere the practitioner is alive to this important and serious addition of disease in the heart, to the original malady. But our knowledge of these affections is now with rapid steps advancing, and I am induced to think that, with the improved means of diagnosis that are now coming into more general use, it will be made apparent that such changes are proceeding in the structure of the heart, long before they have reached so formidable a point as that in which dropsy ensues, as an effect of these changes. A careful investigation of all the circumstances attendant upon bronchial inflammation, when continued for any length of time, will show that something morbid may early be observed in the functions of the heart; these lead on to a change more or less considerable in the structure of the organ, and thus eventually a deep-rooted organic affection of the heart is fairly seated. We may appeal to the results of anatomical examination of morbid parts, for the truth of the assertion that affections of the heart are frequently connected with bronchial disease, both

of an acute and a chronic nature. In acute cases we have repeatedly witnessed serious inflammatory mischief of a recent nature; and in the more chronic, those cardiac affections that are of a slower and less decided energetic nature.*

In the acute cases, it is very common to find the heart and pericardium adhering together; or an effusion of sero-purulent, or serous fluid into the bag of the pericardium; sometimes, also, a false membrane, varying in thickness, is deposited between the pericardium and the heart. The muscular structure of the heart is occasionally inflamed. The membrane also, lining this organ, is often very red, from the effect of inflammation. I have likewise found lymph deposited on the auriculo-ventricular valves. And in almost every instance the cavities of the right side of the heart are dilated, and contain a larger quantity of blood than usual.† After recovery from acute bronchial affections, if we narrowly watch our patient, it may be observed that the effects of the dilatation of the right side of the heart, not unfrequently continue for some time after recovery; palpitations, breathlessness on slight exertions, and diffusion of the sound of the action of the heart over a wider extent of surface than is natural, often assure the attentive observer, that mischief has been done to this important organ, and one of the most common causes of prolonged convalescence, is the action of the heart not being restored to a healthy state. Under such circumstances, relapses take place from too early exertion of the body, or thus, more blood is thrown into the right cavities, than can be disposed of by them in their dilated and weakened state. This may be considered the commencement of a change of structure which leads on to the most formidable consequences. Lately I witnessed a very good elucidation of this threatening of heart affection.

Case 1.

A young man had an attack of bronchitis, affecting principally the right lung. By bleeding and appropriate remedies, he recovered this affection. Very soon after his recovery, before the return of strength, he was called upon for great muscular exertion, and at the same time was exposed to a current of air. He soon afterwards became indisposed, but the cough did not return; he complained of tightness of the chest and oppression, relieved by sighing. He had also night perspiration, a quick and vibrating pulse, and palpitations. The chest sounded well. By the cylinder, the action of the heart was heard over great part of the chest, and in the centre of the sternum, the action of the right side of the heart was heard very forcibly. We gave this young

* In many of the cases of chronic bronchitis, related in my work on inflammation of the mucous membrane of the lungs, more or less of disease was found in the heart or its investing membrane, as for example, cases 1, 5, 8, 10, 14 and 22.

† See my treatise on inflammation of the mucous membrane of the lungs.

man purgatives, digitalis, acids, and kept him in the horizontal position; after which he took sulphate of quinine. The action of the heart became much more quiet, and by going into the country, he regained his strength.

Observations.—This case, if unattended to, might, and probably would, have degenerated into a very serious affection, for the heart and lungs would have reciprocally operated, so as to keep up the state of the disease, and confirmed disorganization of the heart must have been the inevitable consequence.

There is scarcely any limit to the variety that occurs in the mode in which this complication of cardiac with bronchial inflammation, developes itself. A very troublesome form is that in which, what is called rheumatic fever, in a weakly habit, will first give rise to all the pain and suffering in the joints usual in this disease; after which, symptoms of bronchial disease come on, with copious expectoration, quick pulse, and considerable dyspnœa; to these symptoms succeed palpitation, pain in the cardiac region, anxiety, and diffuse action of the heart; restlessness, and difficulty of lying down in bed. Of the obstinacy of this kind of affection, and the difficulty there is in subduing so formidable a catenation of symptoms, the following case is good illustration.

Case II.—Rheumatism, Bronchitis, Pericarditis.

H. R. aged 18, was received into the Worcester infirmary, with much fever, furred tongue, quick pulse, pain and inflammation of most of the joints. He took an emetic of antimony, and was purged with calomel, and seemed at first relieved, but the local pains and fever soon returned, and he had flushing and great excitement. He had calomel and James' powder then administered every four hours, which seemed of some avail, but cough now came on with tightness of breathing, without pain, and soon afterwards a pretty copious expectoration. Pulse 120. He was bled, and took a draught of colchicum and digitalis. The blood was much cupped, but he was relieved, and appeared again better. In a few days he was seized with pain in the region of the heart, palpitation, sighing, inability to lie down in bed, and reclining towards the left side; the cough also, and difficulty of breathing, returned. Leeches, and a blister to the region of the heart, were of some service, and the calomel having now affected the gums, he was thought to be approaching convalescence, but the expectoration became more copious and purulent in appearance; his face flushed towards evening, and the pulse was 140. The palpitations were very distressing, and the heart beat vehemently between the ribs. More leeches were applied, with relief, and the calomel was again repeated in conjunction with small doses of opium. We did not, however, succeed in arresting this very alarming state of symptoms, for they continued unremittingly until he was reduced almost to a skeleton. A seton was then introduced in

the region of the heart, and he went into the country, where he gradually recovered, and returned in six months, cured of his complaints.

Cases of this kind are not, however, very often brought to so happy a termination, and I will now relate one in which a similar train of symptoms led to a fatal result, and dissection disclosed, in a very marked manner, the combination of the bronchial inflammation with pericarditis.

Case III.—Rheumatism, Bronchitis, Pericarditis.

I was called to visit A. M. aged 18, in February, 1826. He was a thin spare lad, and of a delicate skin. He had taken cold about a fortnight before I saw him, and was, for the first days, affected with the common symptoms of catarrh, but more fever than in ordinary cases. He had, some years before, had rheumatic fever, and at the end of a week, to the cough and other symptoms, very severe pain was added in the larger joints of the upper and lower extremities, and the fever became very high.

When I visited him, the cough was exceedingly troublesome; there was considerable dyspnœa, and he expectorated copiously, and the sputa consisted of transparent mucus, mixed with a large proportion of yellow pus-like matter. Pulse 120, hard; tongue very much loaded; urine scanty and high coloured; occasional delirium; stools offensive. He took immediately three grains of tartar emetic, dissolved in water, which produced long-continued vomiting, after which the breath and cough were somewhat relieved. When he had recovered from the effects of the vomiting, I had twelve ounces of blood taken from the arm, and a blister applied to the chest. He was directed to take one grain of calomel, with three grains of James' powder, every four hours, together with a mixture of tincture of colchicum, Epsom salts and magnesia, dissolved in one ounce and a half of water.

The following morning I found him much better; he had been freely purged; the blood was very sizy.

He did not, however, mend in any marked manner, and suffered particularly from inflammation of the joints, and from very harassing cough.

The calomel and other medicines were continued.

On the following morning he was again worse. He now, in addition to the other symptoms, had an uneasy feeling in the region of the heart, and the countenance was more anxious. I observed, also, a slight irregularity in the pulse, which was 130 and weak, but he had no pain in the left side. The impulse of the heart between the ribs, appeared stronger than it had been before.

The prognosis now was very unfavourable, because I felt convinced that the heart, or its investing membrane, was implicated in the mischief. I determined to endeavour to affect the gums by calomel, and therefore increased the dose to two grains every two hours. Twelve leeches were applied to the cardiac region,

and after the bleeding had ceased, a large blister was placed upon the part.

This treatment produced no favourable change; in fact, the symptoms soon became such as to hold out no hope, and the patient died the next day.

Examination of the body.—The windpipe did not appear inflamed, but contained a considerable quantity of purulent mucus. The mucous membrane of the bronchia to their smallest ramifications, was very red, and the cells were full of mucus, mixed with pus-like matter. The blood-vessels generally of the lungs were much congested, and the lungs did not collapse when the sternum was removed.

When the pericardium was cut into, more fluid than usual was found there, of a straw colour, and flakes of albuminous matter floated in it. The inner membrane of the pericardium was more red than usual, but not intensely so: on the surface of the heart there were some white patches from deposited lymph: in other parts, the membrane was redder than natural.

The heart itself appeared rather large, but this seemed to arise from the distention of its right cavities, which contained a very considerably larger quantity of blood than ordinary. There was nothing particular in the cavities of the left side of the heart.

The abdominal viscera were healthy.

But the acute forms of bronchitis, do not so frequently as the chronic cases, afford us the opportunity of observing the progress of the symptoms when affections of the heart become combined with the inflammation of the mucous membrane of the lungs. This latter is a very prevailing occurrence, and although in many cases, from the symptoms not being decidedly marked, the cardiac disorder may not be noticed yet, by careful examination of the patient, the attentive observer will, in the majority of instances where bronchial inflammation has been kept up for some time, detect sufficient deviation from the ordinary action of the heart, to convince him that the continuance of this disturbance, will lead on, in time, to disorganization of a very formidable nature. I do not say that this may occur in a day, or a month, or a year, but no sooner is the disposition to the recurrence of bronchial inflammation established in the constitution, and is consequently called into operation on every casual exposure to cold, than we may begin to suspect that, ere long, there will be something faulty in the centre of the circulating system. Perhaps, at first, there may be nothing sufficiently striking to attract attention: the patient may complain of casual palpitation and breathlessness on exertion, to which he was not formerly accustomed; but these things meet with little regard, or at any rate, are so common after pulmonary attacks, that like all common things, we think little about them. But it is not unfrequent, if in such a condition of the circulation, the person so affected be called upon for considerable bodily exertion, that these symptoms become more

decided; the palpitations will be more distressing, the dyspnœa more urgent, and an anxious expression of countenance, and an uneasy or even painful sensation at the præcordia will come on. If an examination be taken at this time, the pulse will be found beating very irregularly, sometimes not much quicker than ordinary, and steady; at another, weak, and almost fluttering. The action of the heart, at the same time, is unnatural, and is heard over a wider space in the chest than usual; as this arises from dilatation of the cavities of the heart, the extent to which the sound is heard is in proportion to the dilatation. There is a great variety in the intensity of the sound produced by the heart under such circumstances; the impulse of the ventricles and auricles is very various; if there is hypertrophy commencing in these parts, the impulse is stronger than in health; but if, as is much more frequently the case, there is simple dilatation, and that confined to the right cavities of the heart, there is rather a decreased impulse, and the sound of the heart is louder about the xiphoid cartilage than it is in the space between the 5th and 7th ribs on the left side. Convalescents, from bronchial inflammation of long standing, are frequently seen so affected, and such a state of the heart as I have above described, is one of the most common causes of their remaining long in enfeebled health. Time, however, the grand restorer of chronic ailments, if the person so affected be not called upon for exertion, or if the bronchial inflammation do not speedily recur, very often cures this state of what we usually regard weakness, and we hear no more of such patients until the recurrence of pulmonary catarrh, which may degenerate into chronic cough, again calls up the cardiac affection. This may again, as before, disappear, and the patient resume his station in society; but it is a great chance if such a person, should he escape from repeated attacks of bronchitis, is not ultimately the victim of one or more of the many distressing disorganizations to which the heart is subject. It appears likely that the cases of this nature, that occur in conjunction with asthma, a common effect of chronic bronchitis, begin with very trivial symptoms, and an important link in the chain of diseased actions, which often leads on, in cases of an asthmatic description, to hydrothorax and general dropsy,* will most probably turn out to be a simple dilatation and congestion of the cavities on the right side of the heart, produced by the obstacle, occasioned by bronchial inflammation, to the free transmission of blood through the lungs.

Moreover, a vast proportion of those bronchial diseases, be their duration long or short, which become so severe as to be complicated with anasarca or hydrothorax, will be found to be connected with some alteration in the healthy functions or structure of the heart. In my work upon inflammation of the mucous

* See my treatise on inflammation of the mucous membrane of the lungs, in which this source of dropsy is considered.

membrane of the lungs, I have touched upon this subject, and in the chapter upon dropsy, as dependent on inflammation of the mucous membrane lining the bronchia, have said "that the congested state of the lungs in bronchial disease, opposes an impediment to the passage of the blood through the right side of the heart. Both sides of the heart being thus brought into an unnatural condition, they become susceptible of disease. Now if we reflect for what a length of time the heart is sometimes exposed to these causes of disorder, we cannot be surprised that it should often assume diseased action.

"No wonder, then, that palpitation and irregular action of the heart, come on in more protracted cases, and that examination after death, proves aneurism of the heart, chronic inflammation of its valves, and of the pericardium, to be frequent concomitants of long continued bronchial inflammation." Further experience only more strongly convinces me, that our attention cannot be too strongly fixed upon the state of the heart in all this class of diseases.

But, however numerous the instances are in which cardiac affection is seen in combination with bronchial inflammation, I shall narrow the observations that I am now about to make, to some chronic cases of this kind, that have fallen under my immediate inspection, where I had an opportunity of watching the symptoms during life; and, if a fatal issue took place, of ascertaining the alteration of structure that had been produced; and I shall first adduce cases to shew that, when dropsy ensues after bronchial inflammation, the heart is found to be involved in the mischief that has been going on in the chest.

Case iv.—Chronic Bronchitis and Pericarditis; enlarged Heart; partial Anasarca. Recovery.

J. E. aged 40, was admitted into the Worcester infirmary, Dec. 26, 1829. He complained of cough, with copious expectoration and mucous rattle. Pain in the cardiac region, increased by inspiration. Occasional palpitation; considerable difficulty of breathing; legs swollen; pulse 80, strong; tongue clean; bowels regular; urine scanty.

He had been ill for six weeks, and attributed his illness to cold taken in agricultural employment.

He was cupped, and had a blister on the region of the heart, and was directed a grain of calomel, with two grains of antimonial powder, twice a day; and a solution of salts and magnesia three times a day.

On the 28th, he was bled to ten ounces, the blood was much buffed. On the 30th, the cough was relieved; the pain near the heart better; breathing not so difficult, but there was much beating at the heart.

On the 5th of January, there was much palpitation and urgent thirst; not much cough; pulse full. He was bled to ten ounces. Was directed an antimonial saline mixture instead of the former one, and continued the pills.

On the 7th, he had leeches to the cardiac region, on account of pain there, and these were repeated on the 16th, he taking, all the time, the calomel and antimonial powder.

On the 22nd, as the mouth was rather sore, the medicines were omitted, and ten grains of compound rhubarb pill substituted for them twice a day. At the same time, as the palpitation and pain in the cardiac region continued, a seton was inserted there. This soon began to discharge, and he gradually lost the pain and palpitation, and other uncomfortable symptoms, and was discharged cured, the 20th of February.

Observations.—In this case there was evidently a disposition to confirmed pericarditis, in connection with bronchial inflammation and congestion of the vessels of the lungs, which was likely to lead on to general dropsy. But by properly conducted depletory measures, the more active symptoms were removed, and health completely re-established by a purulent drain being made in the neighbourhood of the heart.

Case v.—Bronchitis; Dilatation of the cavities of the Heart; threatening Dropsy. Recovery.

J. C. aged 60, was admitted into the Worcester infirmary on the 9th of January, 1829. He was affected with cough, and copious muco-purulent expectoration, and severe head-ache; occasionally his breathing was very difficult, and he complained of much uneasiness in the region of the heart, the action of which was diffused over a wider space than natural. He had also considerable tightness across the chest, and pain in his loins. Urine scanty and of a high colour; pulse 110; tongue white; bowels costive. Towards night his ankles were puffed.

He was in the infirmary some time before, with similar symptoms, but went out pretty well. He however caught cold, and, as a consequence, all the symptoms returned.

Twenty leeches and a blister were applied to the region of the heart, and he was directed an antimonial saline mixture, together with one grain of calomel, every four hours.

He pursued this plan till the 14th of the month, when the mouth became sore, and the symptoms were mitigated, and at that time he passed some blood with his stools. This he continued to do for some days, when he gradually became convalescent, and was discharged cured.

Observations.—There cannot be any doubt, I think, that when this patient was admitted, he had bronchial inflammation, congestion of the vessels of the lungs, and general fulness and dilatation of the cavities of the heart. He first of all obtained relief by blood-letting, and other means which lessened the quantity of circulating fluid; and his disease was completely removed by salivation, which kept the absorbents very active, and gradually removed those effects of inflammatory action which had interfered with the freedom of the circulation.

Case vi.—Bronchitis; Dilatation of the cavities of the Heart; Dropsy. Recovery.

On the 20th of June, 1829, W. I. aged 40, was admitted into the Worcester infirmary, complaining of urgent dyspnœa, much aggravated by exercise; occasional palpitation and pain in the region of the heart; cough and copious expectoration, with mucous rattle; œdematous swelling of the lower extremities; fulness and pain in the hepatic region. Pulse 110, weak; tongue foul; bowels open.

He had been ill one month, and attributed his complaint, which began with severe cough, to having taken cold whilst engaged in farming.

He was directed a blister to the chest, and two scruples of compound jalap powder every morning; also half a grain of calomel and one grain of powdered squills, twice a day.

On the 22nd, he was bled to twelve ounces, and was directed the jalap powder every other morning, as he was very much purged.

On the 28th, he was slightly relieved, and the mouth being rather sore, he omitted the pills, and had a grain of squills and a grain of powdered foxglove, to take three times a day, drinking with it a decoction of juniper and cream of tartar.

By the 30th, he was so severely salivated, that the tongue was thrust out of his mouth. He suffered woefully from his mouth, and there was so much excitement, that blood was taken from the arm.

He continued in the infirmary to the 6th of August, as the mouth became much ulcerated, and he scarcely, during the whole time, took any nourishment. As, however, he gradually recovered from the severe salivation, he became quite well from his disease, and was discharged cured.

Observations.—In this case, dropsy, as the effect of obstructed circulation through the lungs and heart, was on the eve of shewing itself in its worst form. The purging and bleeding put a stop to the more urgent symptoms, and the others gave way under the severe salivation, during which the absorbents were active, and the quantity of circulating fluid was thus greatly diminished, and a more free passage for them through the lungs and heart established.

Case vii.—Chronic Bronchitis; diseased Valves of the Heart; effusion in the Chest and Cellular Membrane. Partial recovery.

Mr. P. aged 64, a stout athletic man, had been subject, for several years, to winter cough, which had latterly been more severe than on former occasions. In the beginning of the winter 1829-30, he took a more severe cold than usual, which was followed by difficulty of breathing, wheezing, cough, and after a little time, copious expectoration. These symptoms continued some time before he sought any medical advice, but he did so

about Christmas, and was then subjected to such treatment as was deemed necessary. No amendment, however, ensued; on the contrary, he rather became worse. So much so, indeed, that in January, he placed himself under my care. I then found him sitting up in a chair, and this he told me he had been compelled to do for some nights, as a sense of suffocation was produced by any attempts to lie down. The action of the heart was felt very feebly between the ribs, and the sound, as heard by the stethoscope, was much less distinct than usual, and there was a confusion in the rhythm of the heart. The pulse beat very weakly, and was irregular as to strength and frequency; it averaged about 60. He complained of uneasiness in the region of the heart. There was a troublesome cough, and a thin serous expectoration. The legs were very much swollen, and pitted on pressure. The urine was very scanty, and of a high colour. The lips were rather purple.

He was bled to twelve ounces, a blister was applied to the chest, and he took a pill of one-sixth of a grain of elaterium, half a grain of calomel, and one grain of squills, every four hours, with a mixture of tincture of squills, sweet spirits of nitre, and decoction of broom.

The treatment was followed by great success; the urinary secretion became abundant; he was enabled to lie down at night; the swelling left the legs; a thick expectoration took place, and he became, in the course of a fortnight, convalescent; but the pulse remained irregular, and he had frequent uneasiness in the region of the heart.

Early in the month of May, he came to me again, in consequence of a return of the more severe form of his symptoms. He could not again lie down at night; the legs were much swollen; the urine scanty; the pulse very irregular. He had also pain in the region of the heart; very troublesome cough, and copious thin expectoration.

A blister was applied to the region of the heart. He took two grains of powdered squills, and one grain of calomel every night; and a mixture of tincture of squills, sweet spirits of nitre, and decoction of snake-root, three times a day.

From this he has again experienced relief, for, as the swellings subsided from a free action of the kidneys, he is again able to lie down at night, and the cough is much less frequent.

Observations.—It would be difficult, perhaps, to determine, in this case, whether the bronchial, or the heart affection, was first brought into existence; but it is pretty clear that, when he sought relief, both of these parts had fallen into a state of disease. I infer, from the great disturbance in the rhythm of the heart, that the valves had become, in some degree, disorganized, and the very weak and diffused pulsation of the heart, taken in connection with the general state of anasarca, led me to think that effusion occurred in the pericardium. That it was not to any great extent, may be inferred from the relief which arose when the

bronchial inflammation was relieved, and the absorbents generally set in action so as to lessen the volume of circulating fluid.

Case viii.—Chronic Bronchitis and Pleuritis; Hydrothorax and Anasarca; enlarged Heart and inflamed Pericardium; terminating fatally.

R. B. aged 50, was admitted into the Worcester infirmary on the 5th of April, 1830. His breathing was very much distressed, and the face and hands were of a purple colour. He complained much of stricture across the chest, and pain in epigastrio, and appeared very much distressed. There was a mucous rattle, and he expectorated when he coughed, which he did frequently, a muco-purulent matter. The action of the heart was violent, and spread over a larger space than natural. Pulse 120, not strong; tongue furred, and of a blue colour; great thirst; bowels open; urine scanty; legs swollen.

He had been subject to cough for years, from slight cold, but his legs had not swollen until shortly before admission. He was bled, and had prescribed for him calomel and opium, with an ætherial diuretic mixture; but the day following he expired, having been, in some degree, relieved by the loss of blood.

Examination of the body.—Serous fluid was found in both sacs of the pleura: pleura much inflamed: between the costal and pulmonary pleura, a false membrane, like a piece of leather, was deposited. The left lung was hepatized, not so the right.

The lungs, generally, were very much congested with blood, and the bronchia and air-cells were full of frothy muco-purulent matter. The whole of the mucous membrane was inflamed, and in parts thickened.

The heart was enlarged, and its cavities dilated and full of blood. The pericardium was inflamed, and partly adherent to the heart.

Case ix.—Chronic Bronchitis; chronic Pericarditis; Ossification of the Mitral Valves; Dropsy.

On the 11th of January, 1829, R. H. aged 41, was admitted into the Worcester infirmary, labouring under cough and copious expectoration, accompanied with dyspnœa and swelling of the lower extremities towards night. Bowels open; pulse quick; tongue furred. He had been ill of this attack one month, but had been, for a long time, subject to severe cough and difficulty of breathing. He was bled, and took some expectorants, which soon relieved him, as he was discharged nearly well on the 3rd of February. He was again admitted on the 7th of March, and was relieved again by similar remedies to those before adopted, so as to be discharged on the 7th of May. He continued better until October, on the 10th of which month he was re-admitted, and then complained of severe cough, and very copious muco-purulent expectoration. Urgent dyspnœa, and inability to lie down in bed; pain and sense of stricture across the thorax; pain

also in the epigastric region. The action of the heart feeble, and scarcely to be felt in its usual situation. Bowels costive; tongue rather white; pulse 80, regular; urine scanty; legs swollen.

He was cupped, and had a blister to the chest, and took calomel and squills until the mouth was affected, after which he seemed better, but suffered from occasional attacks of difficulty of breathing, which came on suddenly. These attacks were relieved much by camphor mixture, and Hoffman's anodyne. He continued relieved till the end of November, when the swelling of the legs returned, and he then complained of pain in the region of the heart, and the breathing was constantly difficult. A blister, however, to the region of the heart, and a recurrence to the use of the calomel and squills, again suspended the mischief, and the dropsical symptoms, for a time, gave way. He also seemed to get some relief to the asthmatic breathing at this time, by smoking stramonium, and by inserting a seton between the shoulders. In this way, by occasional bleeding, the use of calomel, squills, and anti-spasmodics, with counter-irritants, the symptoms were kept at bay until the latter end of the month of March, when he became universally dropsical. Dandelion tea, for a little time, seemed now to give him relief; but the urinary secretion soon became again scanty, and his strength gave way. He could not, for a long time previous to his death, assume the horizontal posture, but sat erect in bed. The pulse, throughout his illness, was feeble, but not irregular. The action of the heart, as felt on the surface of the chest, was always feeble. He died on the 8th of April, 1830.

Examination of the body.—Thorax.—The left lung completely adherent to the ribs, and the right lung very much so. Both lungs much hepatized, but the left more so than the right. The bronchial tubes much inflamed, and full of frothy mucus.

The pericardium was partially adherent to the heart, particularly so at the upper part of the right auricle and ventricle. The right auricle and ventricle were dilated. A quantity of coagulated blood was also found in the left auricle and ventricle; and the mitral valves and carneæ columnæ were ossified; the communication between the auricle and ventricle was thus narrowed, and did not allow the little finger to pass through it.

Abdomen.—The peritoneal covering of the liver was much thickened, and the liver was not healthy. The kidneys were healthy, but the left was larger than the right.

Case x.—Chronic Bronchitis; Pleuritis and Pericarditis; general Anasarca. Death.

S. F. aged 45, was received into the Worcester infirmary, in January, 1814. She had been, for many years, subject to cough, copious expectoration, and had generally been considered asthmatic. When admitted, the difficulty of breathing was very great, and she could not lie down in bed, but sat nearly erect. The pulse was small and 120, the hands and feet having

a purple appearance. She was bled from the arm, and other remedies were adopted, without any relief. She died in a few days.

Examination of the body.—The lungs did not collapse on opening the thorax. The pleuræ were united together at the anterior part of the thorax; but at the posterior part on each side, there were collected nearly three pints of sero-sanguinolent fluid.

The bronchia were full of frothy purulent matter, and the air-cells seemed stuffed with the same kind of matter. The mucous membrane lining these parts was very vascular and thickened.

The pericardium was found adhering to the heart in some parts, and in others there was a sero-purulent effusion into the pericardium, and the membrane covering the heart had an irregular appearance, from the deposition of fibrine upon it. The cavities on the right side of the heart were very much congested with blood, and there was a communication, though of small size, between the right and left auricle.

The liver was large, and had rather a nutmeg appearance. The other abdominal viscera were healthy.

Case xi.—Chronic Bronchitis; enlarged Heart; ossified Valves; effusion in the Pericardium; Anasarca.

C. H. aged 50, a man who had been for years subject to cough, copious expectoration, and asthmatic breathing, was received into the Worcester infirmary, in consequence of a great increase of these symptoms, in the month of January, 1814. When admitted, his face was purplish; the pulse very small, quick, and irregular. His breathing was exceedingly laborious, so that he was obliged to remain in the sitting posture. The legs and thighs were œdematous and pitted when pressed. He lived only a few hours afterwards.

Examination of the body.—Thorax.—The lungs did not collapse when the sternum was elevated. There was considerable adhesion between the pleuræ covering the lungs and the ribs.

There was a general congestion of all the blood-vessels of the lungs, and some degree of hepatization of several parts of this organ.

The trachea and bronchia were filled with a frothy purulent fluid. The mucous membrane lining these parts was very vascular, and very much loaded with blood.

The heart was much enlarged, and seemed to press very much upon the left lung, so as to throw it considerably back.

The pericardium contained about six ounces of sero-purulent effusion. The pericardium was in parts very vascular, and was adhering to the surface of the heart, over the right ventricle.

The cavities on the right side of the heart were enormously distended with blood. The quantity of blood in the right auricle amounted to near a pint. The mitral valves were nearly ossified.

There was nothing remarkable in the state of the left side of the heart.

The abdominal viscera were free from disease, excepting that the liver was rather larger than natural, and projected more than usual upwards towards the chest, thus lessening that cavity.

Observations.—It would be almost impossible, in cases like the four foregoing, to come to any positive conclusion, so as to determine whether the disease, which finally destroyed life by implicating both the bronchial membrane and the heart, first seized upon the one or the other of these important organs. But the history of the cases is sufficiently explicit to show, very clearly, that the bronchial membrane had long been the seat of diseased action, as all the patients had been repeatedly affected with chronic catarrh, which had caused them to be considered asthmatical. At any rate, viewing the connection between these two important parts, the heart and bronchial membrane, in what light we may, there can be no doubt that, before the dropsical symptoms made their appearance, both parts were affected, and these cases thus become valuable facts, as shewing, with others, the importance that may be attached to this combination of alteration of structure in the lungs and heart, as leading to a formidable class of dropsical affections.

It would be easy to add to the cases above detailed, many interesting examples of the close connection between dropsy, chronic inflammation of the mucous membrane of the lungs, and diseases of the heart; I shall not, however, at present, enlarge upon this part of my subject, but now proceed to notice some cases in which very decided disease had taken place in the bronchial membrane, in the heart, and its great vessels, and was not followed by general dropsical effusion.

After severe rheumatic affection has subsided, it is by no means very uncommon to observe a tendency to cough, and considerable expectoration, and, at the same time, a quickness of pulse comes on. This, in my experience, has been very much more frequent in young persons between the age of ten and fifteen years. By care and attention, these symptoms do not usually become more formidable, and, as they advance in age, the susceptibility of the lungs to irritation will subside, and the health be established; but if such a set of symptoms should meet with but little attention, or should not yield to a proper degree of care and regimen, it may be expected that, to the cough and expectoration, and other symptoms denoting pulmonary irritation, there will also be added such symptoms as are usual in affections of the heart and pericardium; these are, at first, very equivocal, but, as the case advances, they develope themselves very decidedly, and to the ordinary symptoms of consumption, we have superadded the distressing condition that arises from cardiac disease.

Case XII.—Bronchitis; Tubercles; inflamed Pericardium and Heart, and thickened Valves, the consequence of Rheumatism.

R. W. aged 14, a female, was received into the Worcester infirmary, in March, 1813, with cough, expectoration, and quick pulse.

She described herself as having lately recovered from severe rheumatism, which had confined her to the bed for some weeks. During her confinement she had some cough, but took no notice of it. For the last month she had been free from rheumatism, and had been able to get about the house, but her cough increased very much, and a copious expectoration soon afterwards made its appearance. As it evidently grew worse, she was induced to seek relief at the infirmary. There the symptoms soon assumed a still more unfavourable aspect, for she began to complain of palpitation, and some pain in the region of the heart, with occasional tendency to faint. The pulse became very quick, 140; and the blood-vessels in the neck, veins and arteries, could be seen to pulsate. She was, at the end of the month, unable to lie down, and her countenance expressed much anxiety. The heart, also, beat forcibly between the ribs, and her expression was, "it shook her whole frame." She died in the seventh week, exceedingly emaciated.

Examination of the body.—Thorax.—There was a considerable quantity of purulent mucus in the trachea and large bronchial cells, and the mucous membrane lining these parts was much inflamed and thickened. On tracing the smaller ramifications of the bronchia, the same state of disease was observable. Several tubercles were found in the parenchymatous structure of the organ, some of which were softening, but none that we found, communicated with the bronchia. The parenchyma was in parts inflamed.

There was some, but not much, adhesion between the costal and pulmonary pleura.

The pericardium and heart were found closely united together, and the adhesion was firm. The outer surface of the heart, and the lining of the pericardium, were exceedingly vascular.

The right cavities of the heart were much distended, and the right auricle was much thickened from inflammation. The muscular structure of the heart appeared inflamed, and so did its internal lining. The auriculo-ventricular valves on the left side, were thickened. Nothing remarkable in the abdomen, but a lighter colour than usual of the liver, and intimate adhesion between its posterior surface and the diaphragm.

Observations.—I have placed this case first, because the mischief that occurred after the inflammatory action commenced in the heart, extended itself more widely than we generally observe; indeed, almost every part of the structure of this organ, as well as the pericardium, was more or less inflamed. The lungs, also,

were nearly as much so. The effects of inflammation were strikingly developed in the bronchial membrane and the pleura, and there was also a considerable formation of tubercles in the cellular structure of the lungs.

In the next case I shall adduce, the pericardium and bronchia were the seat of inflammatory affection.

Case xiii.—Bronchial Inflammation, accompanied by Pericarditis, terminating fatally.

J. L. æt. 20, was attacked with rheumatic inflammation of the joints, and much fever. He was of a delicate frame, and subject to catarrhal complaints. In about a week after the attack of rheumatism, I saw him, and he had then much fever and a quick pulse. As well as the rheumatic affection, there was considerable hoarseness and quickness of breathing. He likewise had a very troublesome cough, which was attended with expectoration of mucus, and it was brought up with much difficulty, after considerable coughing. He was bled, and had an emetic, after which he took a mixture of tartar emetic, colchicum, and barley water, every four hours, and with each dose of the mixture, one grain of calomel. By this treatment, the symptoms were somewhat mitigated, but the cough continued unabated, and the quickness of the pulse was not much diminished.

In a few days after I saw him, in addition to the symptoms I have before noticed, he complained of some pain in the left side, about the fifth and sixth ribs, and likewise a feeling of anxiety in the same part. He did not lie down in bed, but the shoulders were rather raised. His countenance, also, had a distressed look. The cough was increased, and attended with copious muco-purulent expectoration, and the pulse was still quicker. The tongue was very much furred; the urine of a high colour; and as the evening came on, a flush appeared on the cheeks.

Local bleeding and blisters, with continuation of colchicum and calomel, had no effect in arresting the progress of this affection.

He became thinner; he had regular paroxysms of evening fever; he could not lie down in bed, but had uneasiness in the region of the heart, and frequent palpitation, with occasional irregularity of the pulse. The cough became uncommonly troublesome, and the expectoration of pus-like matter profuse. The legs at length became swollen, and after two months of suffering, he was exhausted and died.

Examination after death.—The trachea and bronchi were inflamed, and contained a good deal of muco-purulent matter. On tracing the ramifications of the bronchi, the mucous membrane was found inflamed and thickened, and the cells were stuffed with muco-purulent matter. Some ulcerations of the mucous membrane were noticed. The lungs, themselves, did not collapse when the thorax was opened, and when they were cut into, mucus, mixed with air, escaped. There were no tubercles.

Heart.—When the pericardium was divided, we found, at the anterior part, that it was united to the heart by a false membrane of considerable thickness. The membrane itself appeared very much injected with blood. At the posterior part, between the heart and pericardium, there was an effusion of about four ounces of serous fluid, in which floated flakes of albuminous matter. The heart was healthy, excepting that the right cavities were dilated.

The abdominal viscera were healthy.

Observations.—Here we have an instance of the connection of pericarditis, unaccompanied with any disease of the heart, with bronchial inflammation. The symptoms of pericardiac affection were not very decided, but they were sufficiently marked to lead those who are accustomed to observe the frequent occurrence of this affection, in acute rheumatism, to a very strong suspicion that the disease was of that nature. The case proceeded perfectly uncontrolled by treatment, although the calomel, the local bleeding, and blistering, appeared well calculated to have arrested the formidable set of symptoms.

I could relate other examples, in which it has fallen to my lot to observe the conjunction of bronchial inflammation with chronic pericarditis; but those I have adduced are sufficient to point out the fact, and the further burthening of the reader with particular instances, would be, in some degree, embarassing, without leading to any deduction of material consequence. I shall only here again observe, that, in by far the majority of cases in which I have seen pericarditis combined with bronchial inflammation, the latter affection has been an attendant on rheumatic inflammation, in which there has been much fever, a very loaded tongue, and considerably quick pulse.

A still more common concomitant of bronchial inflammation, is that in which all the cavities of the heart, and particularly the right side of that organ, are dilated and loaded with blood; for the proof of the correctness of this position, I may appeal to the majority of the cases that have been related in my treatise on bronchitis, where it was found that a loaded and dilated state of the right cavities of the heart, was a frequent attendant. I may likewise appeal to those writers who have given their attention to this subject, for a corroboration of this statement; and I may finally appeal to the anatomy of the part, from which it must appear that obstruction to the flow of blood through the lungs, long continued, necessarily leads to a congestion of blood in the right cavities of the heart.

In numberless instances in which this dilatation and gorging of the cavities of the heart takes place, it leads to little inconvenience, and to few symptoms that can be positively fixed upon; but I have occasionally noticed the most unequivocal distress produced from this cause, of which I will quote the following example.

Case xiv.—Bronchitis; Dilatation of the cavities of the Heart; occasional Dyspnœa, with quick Pulse.

A lady, upwards of sixty years of age, of full, corpulent habit, and rather liable to catarrhal complaints, had an attack of erysipelas, in the legs, to which cold applications were made, with the effect of removing the local inflammatory action; but no sooner was the erysipelas removed, than a cough came on, which was accompanied with some fever, and a quick, hard pulse. She was bled for these symptoms, and took active aperients. There was not, however, any decided benefit to the patient; on the contrary, a tightness of breathing came on to such a degree, that every considerable bodily exertion was followed by more or less of breathlessness.

The cough, in the mean time, became very severe, and was accompanied with the expectoration of a tough mucus. Pulse 110; tongue dry; urine of a high colour. About three weeks from the first attack, she began to complain of uneasiness in the cardiac region, and frequently spoke of distressing palpitation. At this period, too, she became subject to distressing fits of dyspnœa, during which the pulse was small, and 140; the lips were purplish; the countenance expressive of much anxiety, and the extremities were cold. After a time, from ten to twenty minutes, these severe symptoms would subside, and would be followed by a violent fit of coughing, accompanied with an expectoration of tough viscid mucus, and the pulse fell to 110. She lived for about a fortnight after the cardiac symptoms first shewed themselves, and died in one of the attacks of urgent dyspnœa.

Examination of the body 30 hours after death.—On cutting through the integuments covering the thorax, an unusual quantity of fat was found, it being in some parts nearly three inches in thickness.

When the sternum was first raised, there was no very remarkable appearance. Neither of the lungs was at all adherent to the parietes of the thorax, and there was no serous effusion. The vessels, however, of the pleura, were rather loaded.

On the right side of the thorax, the liver was found rising very high, at least two and a half inches higher than usual, thus much diminishing the right cavity of the thorax.

The right lung was much smaller than natural. In all parts its blood-vessels were much congested, and contained large pieces of coagulated, and firmly coagulated, blood. The substance of the lungs, too, was fleshy, and there seemed very little air in them, indeed, the air-cells were scarcely perceptible. On tracing the mucous membrane of this organ, it was found of a very deep colour, and the bronchial cells, in many parts, contained much ill-conditioned pus-like matter. The lung was every where of a darker colour than natural, and there were several black patches.

The left lung, which was also rather small, was very much in the same state as the right.

The heart was larger than natural. There was no fluid in the pericardium.

The right cavities of the heart were very full of blood. There was a great deal of fat around the origin of the aorta and pulmonary artery. The muscular structure of the heart seemed more loaded with blood than natural.

The right auricle and ventricle presented, in their lining membrane, nothing very remarkable, and the valves and pulmonary artery were healthy. In the origin, however, of the pulmonary artery, there was rather a large coagulum, very firm, and with difficulty broke down with the finger.

The lining membrane of the left cavities of the heart and aorta was healthy, excepting that there was some little hardening of the edge of the semilunar valves.

The liver was large. Its texture was hard, and of a pale colour. It had a resemblance to granite. There was very little blood in it. The gall bladder was full.

Nothing else morbid in the abdomen. Intestines not loaded.

Observations.—This case is, in more than one point of view, deserving of much attention. As respects the occurrence of bronchial inflammation, after the subduing of erysipelas of the legs, it is fraught with useful admonition, as it points out how necessary it is that we should be cautious in using repellents under such a state.

On the establishment of bronchitis, there was, of course, much obstruction to the flow of blood from the heart, and this produced an accumulation there, and consequent dilatation of the cavities in the right side of the heart. The accumulation was, in this case, to a very unusual degree, and was almost certainly the cause of the attacks of great difficulty of breathing and blueness of the lips, to which the patient, during the progress of the disease, was subject. It is worthy of consideration, and (I confess I myself incline much to such a supposition,) whether or not, in such a case as the above, where accumulation of blood takes place to an extraordinary degree, the blood may not be partially coagulated during life. The large masses of coagulum which were met with in the pulmonary artery, and which were similar to the polypi of the older writers, seem to me to warrant such a conclusion; and, admitting such a state of the blood to have existed, it explains the distressing paroxysms of difficult breathing.

The following is a case in which congestion of the lungs took place to a great extent, with a more active disease of the heart.

Case xv.—Bronchial Inflammation; enlarged Heart; Hæmoptysis; incipient Hydrothorax.

Wm. D. aged 25, was admitted in the Worcester infirmary, on the 18th of April. Complains of pain in the epigastrium and chest; spits up a good deal of blood; great dyspnœa. Bowels open; tongue clean; pulse 96, hard; great thirst; face pale and yellow; palpitation of the heart; stools of a yellow colour;

makes a good deal of water; has been ill eight weeks; attributes his complaint to catching cold.

℞ Mag. sulph. ʒss. acid sulph. dil. ♏x. Inf. rosæ f. ℥i. M. ft. haust. ter indies sum. Applic. cuc. cruentæ epigast. dein emp. lyttæ eidem loco.

21st.—Does not expectorate blood; pains better; bowels regular. Sumat pil. hydr. gr. i. pil. aloes cu. myrrhâ gr. ij. ext. taraxaci gr. iij. quater indies. Cont. haust.

29th.—Is much better. Pills purge him. Omitt. pil. ℞ pil. hydr. ext. hyos. aa. gr. i. fiat pilula ter die sumenda. Cont. haust.

May 4th.—Is much purged. Cough and dyspnœa better. Omitt. medicam.

7th.—Is much worse. Hæmoptysis has returned; breath very short; makes but very little water; bowels rather costive; great thirst; pulse quick; vomiting. v. s. ad ℥xij. Sumat pulv. opii gr. i. 3tiis. horis. Sumat haust. efferves. horis intermediis.

He died soon afterwards.

Sectio cadaveris.—Bloody mucus in the trachea, but its mucous membrane not inflamed. Bronchial tubes filled with frothy mucus. Mucous membrane of the extreme ramifications of bronchia much inflamed, and filled with thick bloody mucus. Blood effused into the parenchyma in the middle lobe of right lung, and its upper lobe partially hepatized. A patch in the inferior lobe of left lung also partially hepatized. About three or four ounces of fluid in the pericardium. Some fluid in both cavities of the thorax. Heart enlarged. Right auricle and ventricle distended with blood; parietes of the left ventricle very firm, and much thickened.

Liver healthy. Kidneys pale and very small. The other viscera healthy.

Observations.—In this case, the disease of the mucous membrane of the lungs, and consequent congestion of all the blood-vessels of the lungs, was accompanied with a very considerable affection of the heart; and dropsy of the chest, the consequence of the severe disease of these two important organs was beginning to manifest itself, when the life of the patient was cut short by copious hæmorrhage from the distended blood-vessels on the mucous membrane of the lungs. Corvisart would have called the disease of the heart active aneurism of the left ventricle, but I think, in these instances, we are sometimes too much inclined to fix upon one part as the seat of disease, and being then enabled to give a name to it, the mind is satisfied as if some discovery had been made. The real truth appears to be, that disease is very seldom of a simple nature, but affects several parts at the same time; and, as in the case now under consideration, it very frequently occurs that a considerable degree of bronchial inflammation and pulmonary congestion, become complicated with change of structure in the heart. In the above instance, the change took place rapidly, and was of an active character; but

it much more frequently happens, that the progress of this complicated disease is slower, and only after a long interval of time, terminates fatally.

I shall yet adduce another case, which presents to my mind much subject for mature deliberation.

Case xvi.—Inflamed Bronchia and hepatized Lung; enlargement of the Heart; aneurism of the Aorta.

A gentleman, aged 46, engaged in the profession of the law, of sanguine temperament, and particularly subject to inflammatory diseases; who had, moreover, early shewn a great disposition to catarrhal complaints, became, at the age of thirty-five, for the first time, the subject of a severe bronchial inflammation, which left him, ever after, very susceptible of cold. To such an extent was this the case, that he never spent any winter afterwards without an attack, more or less severe, of bronchial inflammation. These attacks were generally subdued by strict anti-phlogistic regimen, and as he was a strong man, of full habit, he generally bore loss of blood well. Occasionally, during these attacks, the pulse was observed to intermit, but this was, on the whole, a rare occurrence.

From the beginning of the year 1826, I attended him, and found him labouring under loss of voice, cough of a deep sounding character, and coming on in violent paroxysms; copious expectoration of a purulent character, occasionally tinged with blood. He did not lose flesh, and had a good deal of muscular energy, so much so, indeed, that he could not be prevailed upon to desist from great mental and corporeal exertion. The pulse was, for the most part, full and strong; but I never observed it at any time irregular. There was little variation in the symptoms from this time till his death, in the latter end of November, in the same year.

He derived some relief from loss of blood and spare diet, but he was not disposed to attend very strictly to medical regimen. A seton was applied over the trachea, from which he experienced some feeling of ease, as he always complained of pain in the region of the larynx.

The manner of his death was very sudden. He had attended to his affairs, and went to bed in his usual health. Suddenly he awoke, and said he felt sick; raised himself in the bed, vomited some blood, and instantly expired.

Examination of the body.—Decomposition commencing. A considerable quantity of coagulated blood escaped from the mouth.

There was a great thickness of fat, covering the abdominal muscles.

A great quantity of fat in the omentum, and covering the pericardium.

A very small quantity of bloody serum in each sac of the pleura. The left lung not at all adherent. The right universally so, but there was no recent mischief.

The membrane lining the larynx and the trachea was very deep coloured, and somewhat thickened. This was also the case generally with the mucous membrane lining the bronchia and air-cells. There was no pus, mucus, or blood, in the air-tubes.

The right lung was not more than half its usual size; it was of a very dark liver colour; it was not at all permeable to air, and evidently had not been so for some time; it was, in short, completely hepatized.

The left lung was not diseased at all, but there was considerable gravitation of its fluids to the posterior part, and it was rather soft.

The heart was much larger than natural, and its texture very soft, and its right cavities very much dilated; no disease of its valves. On passing the finger from the left ventricle to the aorta, the inner membrane of this artery was found lined with bony matter, thin and spiculous.

The whole arch of the aorta was found very much dilated, and entirely lined with the same kind of ossific matter.

This dilatation of the artery evidently pressed on the windpipe just before its bifurcation. The œsophagus was also implicated in it. Adhesion had taken place between it and the dilated artery, and by ulceration, a small communication was brought about between the arch of the aorta and the œsophagus. In this manner blood passed from the aorta into the stomach, which contained at least three pounds of blood. The heart, and the large arch of the aorta, contained no blood.

The internal membrane of the stomach and œsophagus healthy.

The liver was softer than natural, of rather a pale colour.

Intestines and spleen healthy.

The capacity of the thorax small, compared with the general size of the body. The abdominal contents were of a very unusually large size.

The trunk was large, and particularly well formed.

Observations.—As respects the state of the lungs in this singular case, it may be observed that the bronchial inflammation, by long continuance, was, in the right lung, complicated with inflammation of the cellular membrane, which had proceeded to complete hepatization. On the left lung no such complication had taken place.

The state of the heart was that which, in many instances of protracted bronchial inflammation, occurs, viz. general dilatation of its cavities, particularly those on the right side of the heart.

But the prominent feature of this case, was the disease of the aorta, and the curious modification of the symptoms caused by it. The loss of voice, which, during life, had been referred to a primary affection of the trachea, was evidently referable to the pressure of this enlarged vessel upon the membranous part of the windpipe, by which its calibre was diminished, and, in the end, incipient ulceration occasioned.

The termination, too, of the case, is deserving of particular regard. The pressure of the enlarged artery upon the œsophagus, had produced adhesion between these two parts. By ulceration, a communication was formed, and some pounds of blood were poured into the stomach during sleep. The patient awoke suddenly, vomited a large quantity of blood, and died instantly.

It may, perhaps, be said, that, in the foregoing cases and observations, I have too exclusively called the attention of the profession to those instances where it may be presumed that bronchial inflammation was the precursor of heart disease.

But let it not be supposed, because my attention has been occupied in setting forth this state of disease, that I deny the existence of a different order of events. For, in not a few cases, long after heart disease has developed itself, the first symptoms of bronchial inflammation shew themselves.

The character, however, of these cases, is very different from those which I have been before commenting upon. I have had occasion frequently to remark, after the middle period of life, the appearances of broken constitution, and general failure of the powers of the body, connected with irregular action of the heart, and other affections indicative of mischief in that organ. These may have sometimes continued for a long period, without any suspicion of pulmonary inflammation; but as the powers of life have failed, cough, difficulty of breathing, and expectoration of viscid mucus, have come on, and the patient has rapidly sunk under these complicated symptoms. Liver affection, in all such instances, will generally be found existing in connection with the other changes of structure.

The summary of the facts before detailed, may now be briefly stated.

1.—That bronchial inflammation and diseases of the heart are frequently co-existent.

2.—In this combination of disease, the most simple and most common deviation from the healthy condition of the heart, is the congestion of blood, and consequent dilatation of cavities, at the right side of the heart.

3.—This state is productive of embarrassment of the functions of the body, but not to any very considerable extent.

4.—In acute bronchitis, we frequently find inflammation at the same time in the pericardium, the substance of the heart, and in the valves or lining membrane of the same organ; of these, inflammation of the pericardium is by far the most common, and is seen especially where bronchitis succeeds or accompanies acute rheumatism; but this affection often yields to proper treatment.

5.—In cases of dropsy succeeding winter cough, chronic bronchitis, and asthma, there is, for the most part, more or less of disease in the heart and its membranes, as general dilatation

of the cavities of the heart, ossification of its valves, thickened pericardium, and effusion either of a sero-purulent, sero-sanguinolent, or serous nature, into the sac of the pericardium.

6.—These cases, even at this advanced stage, admit of considerable mitigation of the symptoms, and of prolongation of life to an indefinite period.

7.—Bronchitis is occasionally, also, and for a length of time, combined with heart disease, without any dropsical symptoms ensuing, and without being productive of so much disturbance of the functions of the body, as the great alteration in the structure of the organ might at first lead us to anticipate.

The attempt thus made to bring before the reader these cases, which appear to me calculated to illustrate a very important piece of pathology, is so very imperfect, that I doubt whether, in their present shape, they will be considered worthy of public attention. I have, however, long meditated on these facts, and they appear to me to be connected, in some of their bearings, with very important practical deductions.

I feel, also, an inward conviction, that it is only through the medium of pathological facts, correctly ascertained and judiciously applied, that we can ever hope to arrive at satisfactory conclusions in medical science. Conclusions built upon such a foundation are legitimate and true, and have been described by an admired philosophical writer, as the voice of God, and not a fiction of human understanding.

Moreover it may further be urged, if medical philosophy ever assume the shape of a complete structure, pathological facts must form the basis on which the edifice is raised: for myself, I do not claim the honour of being an architect in this building, but as a workman and labourer, I endeavour to gather materials, which may, perhaps, be of some use as foundation stones.

ARTICLE V.

Cases of LYSSA, *with* REMARKS.

BY JOHN JOHNSTONE, M. D., F. R. S.

Fellow of the Royal College of Physicians, of London, &c. &c.

ON the 11th of January, I was called to visit Mr. P. æt. 24, who was supposed to be affected by the venom of a mad dog. He had been bitten in the thumb of the left hand, on the 22nd of November, and as the dog that bit him had been exposed to infection, by being in company with another, destroyed in the last stage of hydrophobia, he likewise was suspected to be mad.

Mr. P. went to the salt waters, and was dipped, and until the last day of December, suffered no inconvenience, the bite having soon healed. On Friday, the first day of the year, he was attacked by shivering, which recurred on Saturday and Sunday, with slight fever, but so slight as not to confine him. On Monday, he had a good deal of pain in the bitten thumb, and stiffness of the fingers, which extended to the wrist; and in the evening he had so much general indisposition, as to be unable to join a party of young friends at his father's. On Tuesday, the pain extended up the fore-arm, and on Wednesday, into the axilla, in which a tumour appeared this day. On Thursday, the pain extended to the shoulder. On Friday, he was affected with trembling about the præcordia, (I presume, chiefly palpitation, but such was the phrase of his friends.) These symptoms increased more and more, and on Saturday morning, Mr. Wainwright, surgeon, in D. was called to see the patient. He found the young man labouring under such strong and general tremors, as to resemble convulsions, with excessive anxiety about the præcordia; and though there was no dread of water, yet the marked character of the countenance, the hurried pulse, joined to the convulsive symptoms, left him no room to doubt that the affection had originated in the bite. This opinion was confirmed by Mr. Thos. Wainwright, his son. A large dose of caustic volatile alkali was given, but was not repeated, in consequence of the repugnancy of the patient. Three grains of extract of belladonna were given every four hours, and on Sunday, Mr. Wainwright desired my assistance. On Monday, I was sent for, and found the patient lying in bed. His head was thrown back, and his countenance, though not distorted, on fire with an expression of doubt and anguish, which it is impossible to find words to describe. Every fibre of his body was in motion on the slightest excitement, even by the opening of the door, the moving of the curtain, but not more particularly by the pouring out of fluids. His pulse was exceedingly variable, sometimes full, at others feeble and fluttering, and sometimes so quick as to be scarcely countable. His respiration was always hurried, but more so when he stirred,

or was induced to drink or to speak. Every species of muscular exertion, indeed, called forth the convulsive twitchings in a greater degree, though he had little power over the motions of the left arm. The tongue was red and moist; the fauces were slightly inflamed. He did not suffer from thirst, and had no aversion to drink. The urine was not high coloured, and he had proper and natural stools. The skin was covered with perspiration during part of the time I stayed with him; at others it was burning and red. The face was somewhat inflamed; the eyes shining and bloodshot. As the convulsive tremors were considerably less than on the preceding day, I was unwilling to alter a plan which seemed to have produced good effects. The belladonna was therefore continned more frequently. At the same time, I ordered as much caustic volatile alkali as could be given, and, to leave nothing untried that had been deemed remedial in hydrophobia, directed as much mercurial ointment to be rubbed into the arms and thighs as could be. I saw him the next day, Tuesday; the convulsive tremors had increased; he was obliged to be supported by a board at the bottom of the bed, and other means. Every slight motion or excitement aggravated the tremors; the opening of the door, the waving of the curtain, a stream of air, walking about the room, &c. He swallowed liquids with hurry, but without difficulty; he seemed to have no aversion to them. The countenance was red, with a mad-like, anxious, wild expression, and a degree of risus Sardonicus. He was delirious, but his attention was capable of being re-called, and he knew the persons about him. He was neither furious nor mad. He seemed to have no idea of the nature of the disorder under which he laboured, though his situation had unfortunately been suffered to be too much an object of curiosity to his neighbours. The fauces were red and inflamed; the mouth was full of saliva, which he spat about him indiscriminately. He spoke in a hoarse, but in no barking tones; he shewed no signs of violence; he suffered my finger in his mouth, and did not endeavour to bite; his pulse was excessively quick, and very unequal. His general appearance was that of a man poisoned by arsenic, just at that interval when the pain has abated, and before the leaden countenance, previous to the last expiration, comes on. It also resembled the last stage of tetanus in some respects, and also the last stage of fever. We repeated the belladonna every other hour; the volatile alkali could not be given. He died shortly after. Such are my notes written at the time, upwards of twenty years ago.

Three other cases of Lyssa have fallen under my personal observation, and I shall interweave some notices of them, and of others treated by my father and brother, among the general remarks which I shall now offer on this disease. As I shall prove that the term hydrophobia is not a character of the disease, and therefore gives a wrong bias to the judgment, I shall take the

liberty of substituting that of Lyssa, which has the advantage of ancient application in its favour, being used by Aretæus. This disease, never spontaneous in the human species, is imparted to man only by the canine and feline race, nor can be imparted by him to other animals, as was proved by the experiments of Vaughan and Babington. In them it is supposed to be spontaneous; that is, to arise from causes that affect the individuals of their race solely; but far more frequently it is the consequence of infection by a bite or inoculation.

In the animals themselves, four weeks or twenty-eight days are the usual period in which the constitutional symptoms of poisoning manifest themselves. But this period appears to be different according to the bulk of the animal. In cows, Vitet says, "La plaie reste dure, calleuse, et mal cicatricée júsqu'au 40me ou 50me jour, tems vers lequel ses bords commencent à se gonfler et à s' ecarter; alors," &c. Again, "La duré de la rage n' est pas constante: le bœuf et le cheval meurent ordinairement 5 ou 6 jours après l' apparition des symptomes, &c." "Les porcs ont beaucoup plus de disposition à être attaqués de la rage que les bœufs, les chevaux, et surtout les brebis, et ils sont plus terribles."*

No animals thus infected, have the power of themselves infecting others, save the originators, animals of the canine and feline race. Many experiments have been tried by Dr. Zinke, of Jena, who largely inoculated with rabid virus; and later by some of the French physiologists, which seem to prove this, and the observations of Vitet are altogether in its favour. The insertion of venom by bite, is the only certain way in which the records of the disease prove it to have been imparted. On a question so naturally occupying the most anxious fears, apprehension must be entertained of every sort of approach to a rabid animal; and, in consequence of this apprehension, the touch of the rabid animal, and even its breathing, have been sources of suspicion and doubt. Aretæus asserts morb. vi. 1, 7, απο γλωσσης κυνος εισπνευσαντος, μυγον ες την αναπνοην ητε μεν ενδακοντος, λυσσα ο ανθρωπος.

Petit, in his note on this passage, justifies the sentiment, and supports it by the authority of Cælius Aurelianus, and Galen, who, moreover, say, that the saliva of a dog, when swallowed, will infect, though there be no wound. Fracastorius confutes this opinion, and I agree with him. Indeed, more recent experiment, not experience, puts the matter out of question. If there be no abrasion of the skin, though venom be placed on a certain portion of it for a short time, absorption will not take place, or the virus will be neutralized. Both Humboldt and Bonpland tasted small portions of woorara: and the experiments of Fontana decidedly prove, that the digestion of the stomach† renders the

* Medecine Veterinaire, tome xi. pp. 482-3.

† Mangili, as quoted by Humboldt, asserts that the whole poison extracted from four vipers, was swallowed by a person in Italy, in his presence, without injury.—Voyage aux Reg. Eq. vii. c. 24.

venom of the viper innoxious, and we are therefore justified in transferring the analogy of the other secreted poisons of animals to this. But I beg leave to dwell on this plain topic a little longer, as during the time that Mr. P.'s case agitated the country, my advice was frequently asked about it. In one instance, I was consulted by a farmer's wife, whether the milk of a cow, bitten by a rabid dog, was capable of imparting infection when used as aliment. Two cows were bitten nearly at the same time, by a rabid dog, both in the nose. The strongest of the two began to refuse food, to hang down its head, and to appear restless in twenty-nine days inclusive after the bite; the weaker in thirty days. The stronger began to be affected in the evening, and after shewing signs of great fury, running about, raving violently, foaming at the mouth, was shot at five the following morning. The family had not eaten of the milk of either for three meals before the symptoms of infection appeared, but even then were apprehensive of being poisoned. I assured them of their security, the animals not shewing any signs of disease till thirty-six hours after the milk used had been drawn from them. But even if the milk had been used of the last milking before the rabid seizure, I should have endeavoured to relieve them from alarm, by confidently asserting, that though the milk secreted at that period might not be equally wholesome or good, still, from the analogy of other poisons, it could not be supposed capable of conveying infection. My opinion would have been the same, had the flesh of the animals been eaten raw. Even had the milk been employed in poultice to an ulcerated surface, I would have refrained from giving an unfavourable opinion.

This is a question of deep interest, and has often been deliberately discussed. Do all the febrile infections, or do any of them, convert all bodies and all parts of bodies into venomous substances, capable again of imparting infection or no, when they actually enter the bodies, or produce constitutional effects upon the bodies of men or animals? The question is not whether they become unwholesome matters, but whether they are converted into specific poisons. In the case of the Bubonic plague, and of variola, we know that the external and internal coverings of the body are tissued with spots of disease, which, by collocation or insertion into ulcers or wounds, produce a like disorder. In such cases, therefore, may we not transfer the morbid change to all parts of these infected bodies—would the sanies of a corrupting muscle, the saliva, the urine, the milk, the semen, inoculate? We might doubt about corrupting parts, but the act of secretion is the act of transformation into new bodies, and therefore I should have no doubt of the incapacity of all natural secretions to propagate infectious disorders by inoculation, excepting only saliva, on account of its being so intimately connected with ulcerations or affections of the fauces. And this leads us to enquire what is the venom, and whence comes it? Does it bear analogy to the other natural poisons of animals? Does it bear analogy to other

morbid or unnatural poisons of animals? From what organs is this particular poison secreted, and what affections of what particular organs produce it? The saliva of animals of the dog kind has been usually accused as the agent. But it is clear that in its healthy state, it has no venomous quality, and the dog that bites and infects, must be in a state of disease to produce venom. What is this disease? Is it analogous to the putrid malignant sore throats of the human species? Again, do we know any thing of the chemical nature of the venom, whether it be sanies, saliva, or diseased secretion? Is it essence of azote, (surazotation de Guyton-Morveau,) or a species of gaseous oxide of azote, called by Dr. Mitchell, of New York, septon; or is it a particular species of hydrogenated azote, according to Odier, or according to Van Mons, a peculiar carbonated hydrogen, holding animal matters, whose nature is not yet ascertained in solution? Such are the theories of men of science about another sort of contagion, and we may speculate in the same way about this. They lead, however, to no conclusion in practice, and we know nothing of the action of the rabid venom in animals, except when it is inserted by a bite. When it has been thus inserted, various have been the periods before the marked and fatal symptoms have appeared. In the case of Mr. P. forty days inclusive, from Nov. 22nd, to Dec. 31st. In the case of Charles Bullock, related by Dr. Edward Johnstone, the child, 4 years old, was affected in twenty-seven days inclusive, after the bite, and lived three entire days.* In the case of the child in Cheapside, æt. $5\frac{1}{2}$, under the care of dispensary, Birmingham, the infection appeared in more than five weeks after the bite. The treatment was anti-phlogistic, bleeding carried as far as it could be. George Pollock, æt. 45, whose case is recorded by my father, was affected three months after the bite, and lived four days after the urgent symptoms, and being bled to excess.† In the case of the farmer, related by my father, the disorder appeared in less than three months after the bite, and lasted six days, vomiting, purging, and mercurials, being the treatment.‡ In Millward's case, to be related hereafter, the symptoms in more than three months, and lasted four days. The young man, in the Birmingham hospital, died on the fifth day after the urgent symptoms: his treatment, by Dr. Carmichael, was mildly anti-phlogistic, with liquor ammoniæ rubbed on the abdomen. I have no memorandum of the time of the bite. It is said that, in hot climates, the disease has appeared in four or five days after the bite; in other situations, it is said not to have occurred in less time than eighteen months after the bite. But I know of no well authenticated cases of these short or long periods. From one month to four, the disease has been ascertained. All longer or shorter periods may be suspected.

* In memoirs of the Medical Society, London, pp. 255.

† Medical Essays and Observations, pp. 268.

‡ Medical Essays and Observations, pp. 297.

When the poison of a rabid animal has actually taken effect, the incipient symptoms are those of slight fever. In Mr. P.'s case, for three days, he had fever so slight, that it did not confine him. On the fourth, he had a good deal of pain in the part bitten, and though severely indisposed, and though the pain, for four days, was gradually extending itself up the arm to the shoulder, and though on the eighth day he was affected with trembling about the præcordia, yet it was not till the ninth day that they sought the assistance of their family surgeon, Mr. Wainwright. At this time, strong and general tremors, resembling convulsions, extreme dyspnœa, excessive anxiety about the præcordia, marked character of countenance, and hurried pulse, had manifested themselves, and the disease terminated in four days after their manifestation.

That dread of water was no characteristic of the disease, was proved in Mr. P.'s case. He had no dread of fluids, he wished to swallow, and tried to swallow, and every excitement produced an equal effect upon him. His leading symptoms were convulsive tremors, extreme difficulty of breathing, hurry of the pulse, anxious appearance, shining indescribable expression of his eyes, increased secretion of saliva, and such exhaustion of strength, as rendered him incapable of bearing the least excitement, without a species of convulsion. Delirium or phrensy generally close the scene, but madness is not a necessary part of the disorder.

Most of the dissections of persons destroyed by rabid poison, have shewn the pharynx or alimentary canal in a state of what is called inflammation. The young man who died in the Birmingham hospital, when opened, exhibited marks of inflammation in the trachea and bronchiæ, and those parts of the lungs immediately communicating with them, which were full of froth. The œsophagus was not inflamed. In Dr. Ferriar's patient, opened four hours after death, "about two inches above the cardia, the epidermis of the œsophagus was abraded in irregular points, and exposed an inflamed surface of a dark red colour. Still lower, the abrasions became linear, and extended into the stomach itself." In the child who died in Cheapside, nothing unusual was disclosed by examination of the body after death. The trachea internally appeared redder than natural, and the mucous coat of the stomach was very vascular. In Milward's case, the brain and spinal marrow were apparently sound, and no serum was effused in the ventricles, but marks of the acetate of lead, the medicine he constantly took, were traceable in the stomach and small guts, and hence we have an intimation what to suspect, and how to examine, when acrid or deleterious drugs have been administered as remedies.

The diagnosis of poison by a rabid animal, affecting the human body, was heretofore looked upon as decisive, when the dread of fluids became a marked symptom, coupled with tremor, agitation of mind, restlessness of body, wild cast of countenance. But the dread of fluids is not a constant symptom. Mr. P. had

no dread of seeing or swallowing them. He was exhausted by the slight effort of lifting up his hand to his mouth, and the attempt to swallow; he was agitated by a breath or stream of air, because it wore out a part of his remaining strength, but he had no dread of it. In the various diseases of exhaustion, whatsoever be the causes of that exhaustion, there is difficulty of swallowing, and where there is difficulty of swallowing, there will naturally be dread of it. This, in my opinion, is the rationale of that symptom in hydrophobia. All the dissections prove some degree of inflammation of the pharynx or œsophagus: in all these there must be pain in swallowing.

But let us look to some analogy. In the winter of 1800, I was desired to see a poor woman suspected to have hydrophobia from the bite of a dog, eight months before, and I was shewn a large cicatrix on the leg, from the bite, but there was no evidence that the dog was mad. She lay seemingly insensible, but on my asking necessary questions, was conscious, and answered some of them herself. Her pulse was less than 70, and exceedingly small. She had some head-ache, and when she attempted to swallow liquids as well as solids, (for neither did she express any aversion,) the liquor gurgled in her throat, violent spasms of the muscles of deglutition came on, and threatened suffocation. Of course she dreaded making the attempt to swallow. There were no tremors or agitations, except when the attempt to swallow was made. The countenance was pallid except then; no outrageous expression; no excitement of any kind. I directed moschi vi. et opii gr. ij. to be given every four hours; and glysters of broth every hour; her complaint appearing to me to arise from exhaustion and inanition, not poisoning. She recovered rapidly. Here, then, is the diagnosis between the diseases of inanition and rabid poisoning. In the first there is torpor of all parts, and consequently, parts called upon to act, not being joined in their action by the synchronous motions of the adjoining and adjacent parts, there is disorder, and what is called spasm. In rabid poisoning, the parts employed in respiration and deglutition being inflamed, whilst all parts are poisoned, there appear dyspnœa, tremor, spasm, convulsion. In both there is defect of vital power. In the one it is a gradual subtraction. In the other it is the violent effort of struggling and expiring nature.

In the natural poisons of vipers and tropical snakes, there is often a resemblance which requires diagnosis. (I name natural as a distinction between common and diseased secretion.) There are tremors, agitations, convulsions, particularly about the throat, and oftentimes locked jaw. But the quick access of the symptoms in natural poisoning, will always mark the difference, notwithstanding a resemblance which forces itself on our notice. From the poisoning of mineral substances, too, a diagnosis may be required, particularly the poisoning of arsenic. When the vomiting and purging have ceased, the pain often

subsides, whilst the red and excited appearance of the countenance yet remains. Here the tremors and agitations are violent, the deglutition is difficult, and convulsions often come on. But the previous symptoms of vomiting, purging and pain, and the time of their accession, again distinguish. Arsenic destroys in a few hours; the rapid succession of the symptoms, the agonizing pains preclude a doubt in the first instance, and even should there be a suspicion in the second, it will soon be solved by the intermission of the excitement, by the leaden countenance of death, and the dissection of the body. Fevers of the malignant class, when rapid in their progress, may, near their close, be mistaken for rabid poisoning. The tremors, the agitation, the mobility of the pulse, may, for a time, seduce us into doubt. But in estimating the quantity and quality of the precursory and succeeding symptoms, the kind of excitement and higher degree of mobility, the energy of tremor, instead of the quivering of tremulousness, we may soon be undeceived—there is the coma of fever, compared with the electrical excitement of lyssa, the listlessness, the languor, the numbness. As an illustration of this resemblance, and of the necessity of diagnosis, it may be remarked as a fact, curious both in history and in medicine, that in the first accurate detail handed down from ancient times, of the origin, progress, and symptoms, of an epidemic fever, poison was suspected among other causes. Και το ωρωτον εν τω Πειραιει ηψατο των ανθρωπων και ωστε ελεχθη υπ' αυτων, ως οι Πελοποννησιοι φαρμακα εσβεβληκοιεν ες τα φρεατα. Thuc. lib. ii. μ. η. 48.

There is also need of diagnosis in part of the disease of Tetanus, —— but here the skilful renunciator will mark the locked jaw, which never, so far as I know, occurs in rabid poisoning.

On certain prejudices which cling to the uninformed mind on this subject, I shall say a few words. I have already alluded to the terrors of the public, when the report of the existence of a rabid animal is spread abroad. In the autumn of 1807, I was frequently appealed to on the power of the saliva or breath to infect. During Mr. P.'s illness, I had abundant opportunity of witnessing the progress and influence of such terrors, for he was suffered to be too much exposed to visitors and spectators. His saliva, which he spat copiously and indifferently about him, was a particular object of horror, and I did not shrink from the opportunity of wiping it from my own hands, whilst I was sitting by his bed side, to shew my feeling of security. Nor did I refrain from putting my finger to his tongue in the usual course of examination. But another prejudice, which is of a still more odious nature, as it leads to more fatal consequences, should meet with unceasing reprobation. Such was the gross ignorance which prevailed, and I fear it is a general prejudice still, that I was asked more than once, whether I had laid Mr. P. to rest with opium, or how he was to be disposed of. It was reported, also, that he had been smothered, and this murderous babble was listened to without indignation. When a patient knows that he labours

under rabid infection, and couples his disease with this revolting prejudice, no wonder that it should drive him actually mad; and more than probable it is, that, when patients become furious in the last stages of their disorder, their phrensy arises from this cause. The poor man in the Birmingham hospital, was rendered phrenetical by this impression, and actually ran from his bed into the street, to avoid supposed suffocation. One of Dr. Vaughan's patients was rescued from his attendants, who actually attempted to smother him.—" Robert de Chambourigaud mordu par un loup en Fevrier, 1746, se portoit au mieux, et tailloit sa vigne le 33me jour; un paysan imprudent qui passe, lui dit à propos de son aventure, qu'un tel et un tel étoient morts de rage, six mois après leur morsure. Robert entendant ce propos, à peine est retourné à sa maison, qu'íl est triste, reveur, et dégouté; ses cicatrices s'enflamment d'une manière horrible, la fievre le saisit, on le saigne quatre fois en douze heures; il a horreur de l'eau, et les autres symptomes de l'hydrophobie. Enfin le 5me jour il se pendit pour terminer (disoit il) ses souffrances."* Let us not cease, then, to cry aloud, and spare not, to eradicate the prejudice, and to instruct the ignorant, that, in the eye of the law, it is wilful murder, to put persons labouring under rabid infection, or any other disease, however desperate their condition, to death, either by medicaments, wounds, or suffocation. Sentence of death was actually passed on some wretched women at York, who wilfully put to death, they called it to rest, a suffering infant with opium, under the impression that its sufferings were irremediable, and its health irrecoverable. I fear that the evidence of Dr. Vaughan's case proves its latent prevalence, and though there is no actual proof of its open perpetration in this country of late years, as regards lyssa; in France there is. " In 1791, two young ladies, one 14, the other 17, residing in the Rue du Faubourg St. Honoré, were bitten by a dog supposed to be mad. An ignorant physician, concluding they were incurable, ordered them to be immediately smothered."†

Of the prophylaxis we may unhesitatingly assert, that not one precaution is certain but excision. Dr. Haygarth advised sedulous soaking and washing, and could we be sure that every particle of venom inserted by any one given bite was washed away, the method would be safe. But it is not possible to be certain under the use of such means, and therefore let us not trust to them. Caustic, like washing, may remove the poison; nevertheless, let no weakness tempt the practitioner confided in, to spare the part bitten, when he has the power to cut it out, and when the biting animal was undoubtedly rabid.

Ense recidendum est, ne pars sincera trahatur.

This excision should be made as soon as possible after the bite, but is not to be deferred or declined even up to the

* Sauvages, section x. quoted in Pearson's Hydrophobia, p. 17.

† Galigani's History of Paris, p. 252.

moment of invasion of the lethal symptoms. In the case at Cheapside, treated by the Birmingham dispensary, three persons were bitten on the same day, by the same dog. William Probat, æt. $5\frac{1}{2}$, was affected six weeks after being bitten about the eye, and lived three days thereafter. My learned friend, Mr. Hodgson's practice and opinion in these, are well worthy imitation in all like cases. "This child was bitten in the arm by a dog, six weeks before the accession of the symptoms of hydrophobia. On the same day, previous to the biting of William Probat, the same dog bit a little girl, Mary Anne Wakefield, aged $2\frac{1}{2}$. Subsequently, Samuel Eades, aged 42, in an attempt to take the same dog to destroy it, was also bitten in the arm. After William Probat was seized with symptoms of hydrophobia, I cut out the bitten parts from Mary Anne Wakefield and Samuel Eades, and both have remained free from disease. The wound in William Probat, made by the bite of the dog, was quite healed when the symptoms of hydrophobia came on. They were not cut out. These cases appear to me very strongly to prove, that the excision of the bitten parts, at any period before the accession of the symptoms, is a preservative from hydrophobia." The dipping in salt water, and the Ormskirk medicine, are futile placebos, nay, worse than futile, for they avert prompt and decisive action, and prevention by excision. Neither have I any reliance on mercury as a preventive of disorder, or a remedy for it when established. Ense recidendum est, should be the maxim and the practice, whensoever there is reasonable suspicion.

In its first stage, rabid poisoning is said to have yielded to remedies, and many strongly asserted cases are to be found among the records of medicine. It, like every other poison of the animal kingdom, may be supposed to become either certainly lethal, or more or less dangerous to life, in proportion to the quantity of venom inserted. Fontana's experiments on the poison of the viper, and some others which infect by insertion or inoculation, prove the fact in their case as to quantity, and where our knowledge is so limited as it is, in regard to morbid animal poisons, we cannot be forbidden to infer by analogy. Thus, then, may we reason on one supposition, though it is far more probable that excision was the preventive or prophylactic—that Probat, of the Cheapside family, had such a large inoculation of virus as necessarily to destroy life, while Eades and Wakefield escaped, from the insertion of a smaller portion. Certainly we may presume, that some of the wonderful escapes we read and hear of, and the variety of suffering that arises from the bites of the same dog, are to be thus accounted for, or from the poison being wiped off.

Of the rationale, however, of the action of morbid poisons, we know too little, to entitle us to build up any scientific code or system. Inoculation has thrown some light on the subject, but it is only a gleam through the gloom; and our imperfect reason derides the assumption which asserts unlimited control over certain morbid operations of animal bodies. If we are asked

why the insertion of the variolous, or the vaccine virus, produces a multitude of gangrenes, or only a few, or even a solitary pustule, after some days—or why the insertion of the poison of a rabid animal, seems to commence its action only after three months—or why the insertion of the venom of the cobra, the rattle snake, the katuka rekula poda, or of the viper, destroys in a few minutes? What have we to answer! All we know is, that certain consequences ensue, over which we have very little control, though we have some, and that a great duty is imposed upon our ignorance—to look, mark, learn. That the rabid poison lies latent, inactive, and asleep, in the part bitten, till the constitution is roused by some unknown procedure or effort, is nearly certain. What goes on during this sleep of the constitution, we know not. Wonderful and mysterious it appears to our circumscribed intellect, that what is so death-producing in its nature, should lie quiet for an instant; yet it is seemingly quiet even for months. When it begins to bestir itself, its first manifestation is slight fever; the next, hebetude, or slight failure of power in the part bitten; and then come the train of lethal horrors, dyspnœa, convulsive tremors, and delirium. When we see the human sufferer, he is generally dying. In all the cases visited by me, prophylactics were out of the question; every one of the patients was in a moribund state, with peculiar excitement of the sensorium, not madness. True it is, that madness is a frequent consequence of rabid poisoning, but, if I may be allowed the expression, it is generally a factitious and imported disorder, made by the circumstances which too usually attend and surround the patient, but which do not necessarily pertain to rabid poisoning. He is induced to think himself mad, by his own misconceptions of the nature of his disorder. He is styled so, and treated as such by the attendants, and thus influenced by fear, is goaded to phrensy by the curiosity and alarms of officious spectators. Hence the character which the disorder so often assumes; the biting, barking, acting the dog, and the thousand mimicries and hallucinations of perverted and deranged intellect.

On this account, after excision, during the period of uncertainty, a person bitten should be secluded from all unnecessary observation, nor exposed to the influence of idle remarks; always insisting on the truth that the disease itself is not madness, though false alarm and never-ending terror, may, in some temperaments, make it such.

Considering the reputed number of rabid dogs, (I put foxes* and wolves, in our country, out of the question, and though we hear of cats biting and infusing rabid poison, I know of no authenticated fact,) perhaps not one bite in fifty takes effect, either by reason of the venom being wiped off on a garment at the moment of the bite, or from the venom being diluted with

* I believe the late Duke of Richmond was bit by a rabid fox, and died of the poison, but this was in *Canada*.

the saliva of the rabid animal, and so rendered innoxious; or from an insufficient quantity being infused. Happily for our comfort, whatsoever be the cause, our most faithful domestic animal very rarely communicates to his protector, the horrible disease to which he himself is subject.

In 80 years' practice, that is, from the time of my father's beginning until now, May 20, 1830, (in which period we have probably seen among us, 400,000 sick persons,) seven cases only have fallen under the observation of my father, my brothers, and myself, and of these we had only one each under our own immediate care. In the Birmingham hospital, established 50 years, 112,725 patients have been admitted, and among them there has been only one case of Lyssa. On these data, the average occurrence of Lyssa is 1 in 120,000 cases.

Willingly should I linger on the subject of the cure of Lyssa, had I any thing to add to the pompous catalogue of vain and useless or noxious means that have heretofore been employed as remedies.

When speaking of the prophylaxis, I urged excision as the only security. If the case were simple poisoning, by either mineral or vegetable poisons,* *your* first duty is to evacuate the stomach of every portion of it, either by vomiting or pumping it out. In rabid poisoning, get rid of it as soon as possible, by cutting out the part bitten, the bed in which the poison is deposited, and do this at any time from the moment of insertion to the first accession of the symptoms. When the venom has taken effect, and manifests its action by the convulsive tremors, as we have no brain and nerve pump, and have no means to neutralize the virus, or of stopping its career, let us proceed cautiously. Having no scientific grounds to proceed upon, do not torment the sufferer by your officiousness, with cantharides, butter of antimony, tartarized antimony, and actual cautery, and above all, do not destroy by depletion. As they may be indicated, use the lancet or leeches, or diaphoretics, or anodynes, and above all, the anti-febrile cooling system in the first instance, but in no stage take away the chance of revival, by outrageous experiments—Violence is not vigour. One of my learned professional friends declares he would drain the body of every drop of its blood, and supply its place by transfusion: I more than hesitate about this doubtful practice. Celsus advises cupping, cauterization, hot baths, oil, &c. Vegetius, actual cautery, imposes darkness, forbids water, and makes his animals drink wine, mixed with nitre, bitumen, and elder.† Surely it is a strange theory which gives wine to herbivorous animals to prevent madness! Yet we find none better during the lapse of ages, which witnessed the

* This phraseology points out the origin of the paper. It was, in fact, a clinical discourse in the Birmingham general hospital, of which Dr. J. J. is senior physician.—*Editors.*

† Vegeti Renati ars Veterinaria, lib. 3.

various changes of rational, methodical, and empirical medicine, and the anile devices of oracular specifics, and magical charms and incantations.

The great Boerhaave, the vigorous Radcliffe, the learned Mead, and, let me add, in our own time, the indefatigable, inventive, and sagacious Hunter, have done little more. The first, guided by his humoral pathology, bled copiously, and to allay the phrenetical symptoms, cooled the scalp with ice and water, whilst he relaxed the bowels by injections. The treatment of George Pollock, by Dr. Rutherford,* is a specimen of the Boerhaavian practice, which, so far as bleeding is concerned, has been followed up with zeal by Dr. Shoolbred, in India. Were we to give implicit credit to every narrative dictated by partial observation, or self esteem, medicine would have no failures; every disease must have found its remedy—and though the average of human existence still continues unprolonged, all impediments to enduring life are empirically removed. So I fear it is with Lyssa. They say they cure it in France with mercury; they say it is cured in India by bleeding; and in other countries, with lytta, and what not—and yet, alas, we cannot cure it in England, though we employ the same remedies in the same doses. Accordingly, we have been compelled to discard Mead's boasted lichen, called pulvis anti-lyssus, and hundreds of specifics obtruded upon us by asserters, pretenders, and impostors.

Bleeding, burning, blistering, purging, vomiting, and salivating, having had their turn, the age naturally resorted to sedatives. Dr. Vaughan gave his first patients 57 grains of opium in 14 hours, besides half an ounce of laudanum in glyster. Dr. Babington is said to have given 180 grains of opium in 11 hours, *without benefit*. In Mr. P.'s case, belladonna seemed at first to give relief, and impressed with the idea that ammonia was indicated, I eagerly advocated its use. It could not, however, be administered in that stage of the disorder. Those who have witnessed the last stage of Lyssa, will readily conceive this; you have really no power to act. My father and brother relied upon mercury; in the case of Charles Bullock, it was tried, and fully tried, in vain. Let me remark, by the bye, that even this infant of 4 years old, had learnt some of the prejudices about his disorder. "He frequently desired the bystanders to get out of his way when he was going to spit." I shall now bring forward another case, which fell under my own observation, though not my practice, as it affords a specimen of the symptoms of unadulterated and unsophisticated Lyssa, and also of two new methods of treatment; and especially of a manly bearing and fortitude in the patient, without a parallel, which raised his mind above fear, and excluded the influence of prejudice; and so exhibited the action of the rabid poison on *a man* in true colours, without the mimicry of feigned symptoms, or those aggravations of terror which lash and goad the unhappy patient too often into phrenzy and madness.

* Johnstone's Medical Essays and Observations.

On the 7th of August, in the evening, —— Millward, an athletic labourer, of middle age, from a state of perfect health, felt himself unwell, with a sense of weight and hebetude in one of his arms. On the 8th, he was affected with spasms of the larynx and pharynx, so as to swallow and breath with difficulty. On the 9th, he was seen by several professional gentlemen, and it was not till then that he recollected that he had been bitten by a dog more than three months before. He was ordered to be bled, which was done to the amount of 24 oz. and then to have 4 grains of opium, mixed in 24 oz. of tepid water, injected into a vein, which was done, and he was also ordered to take liquoris plumbi acetatis ℥xx. every other hour.

I was invited to visit him in the afternoon of the 10th; he was standing on the floor of his kitchen when I entered it; his countenance on fire with the inexpressible character of lyssa, and panting and puffing, almost strangled by the impulse of the air on the opening of the door, which he entreated might be shut. I desired him to try to swallow some milk, which he said he should be thankful to do, if he could, as his throat was burning hot, and he was very thirsty. He said he had no pain, yet the spasms affecting his breath recurred every two or three minutes, and whensoever he attempted to swallow, it required almost super-human courage to muster up resolution to attempt it, on account of the spasms. Yet he tried, drew himself up, opened his mouth while one table spoonful of milk was injected by a syringe into the fauces, which he swallowed with such difficulty as to threaten the worst consequences; nevertheless, with undaunted spirit he persevered, and we got down half a pint of milk during the hour I stayed with him. His pulse ranged from 160 to 200, small, unequal, and almost uncountable, from the tremors. After each of the spasms, his mouth was full of frothy saliva, which he spat freely about. He was bathed in perspiration. Every fibre of his body quivered with tremor, and when the spasms supervened, impeded anhelation threatened instant dissolution. His countenance was *torve* and fiery red, and the cellular texture about his eyes and his neck, was much swelled by the labour of respiration and deglutition. He was neither delirious nor furious, nor under the influence of any illusion or fear, except slightly wandering near the close. He manfully exerted himself to do what was deemed advisable, and swallowed milk to the last. He died six hours afterwards, at seven in the evening, at the moment a dose of acetate of lead was injected into his fauces. The body was examined the next day. No discoloration was observable in the œsophagus. The pharynx was somewhat redder than usual, as were the glottis and the epiglottis. The stomach was covered with black mucus, in stripes, which continued throughout the jejunum and ileum, and they were all injected as by inflammation. The brain and spinal marrow were apparently sound, and no serum was effused in the ventricles. The other parts seemed healthy.

This case is fertile both in reflection and inference. We have two new remedies tried; we have bleeding, and all in vain, and vain, I fear, will be all attempts when the poison has seized the vital parts, as it obviously had in this patient, before any professional person saw him. Had the part bitten been cut out on the 7th, would it have availed? The event proved that venom, sufficient to destroy life, had been inserted by the bite. In every case there is this doubt, and therefore in every one would I remove the bed in which the poison is deposited; most assuredly I would have extirpated the bitten part on the 7th. When the spasm supervened on the 8th, the venom had taken effect, and all the ulterior symptoms were merely the dying process. Well, taking this for granted, it may be asked, should the physician make no attempt after the tremors and spasms exhibit themselves to arrest the progress of dissolution? Yes; he should act as he would in every other precarious case. His maxim should be, nil actum, dum quid superesset agendum. As in fever, he should keep up the powers of nature to the last gasp, uncertain as he must always be whether such a quantity of vitality may not remain as to be restorable, and capable of being raised to action again. So, in poisoning, doubtful whether the quantity of venom administered or inserted, may not be less than that which is requisite to destroy life, he must fight against the progress of destruction, by keeping the remnants of life together, and doing nothing, and administering nothing, that can deprave or diminish them. Of the ultimate effect of transfusion into the circulation, we have so little modern experience,* and ancient experience is so much against it, that I should not dare to hazard the trial. It might be remarked, *satius* est anceps remedium experiri quam nullum. True, when remedium is the question, but Celsus does not hazard the same assertion about pharmacum, for there the proposition or the principle would not hold. In regard to acetate of lead, I do not affirm that it altered the symptoms of the complaint during life, but in point of fact, in Millward's case, it offered the only indication of disease on dissection. Such is the light of anatomy! In another respect, this case is amply illustrative. Milward had no fear of water or fluids; he had no objection to the sight, but to the effect, of them; he could not swallow any thing without extreme difficulty, and therefore was obliged to *manage* the swallowing them. He wanted fluid to allay thirst, and therefore made strenuous endeavours, and even struggled against death itself to swallow—but he had unusual courage and spirit—in ten thousand we shall seldom find such another. Perhaps his imagination and courage were exalted and heightened; in no other respect was he altered in intellect. He was not furious during any part of

* Dupuytren is said to have injected laurel water into the veins of dogs, and opium into the veins of men, *without benefit*, in cases of Lyssa; and as a remedy for the same, my learned colleague, Dr. Booth, in his treatise on hydrophobia, recommends the injection of acetate of morphine into the veins.

his disorder, and very little delirious at the last. So much, indeed, was he under the control of right reason, that he died in the very act of obeying one of the injunctions of his medical adviser. He was poisoned, and NOT MAD; and we have yet to learn,* whether the bounty of Providence has granted to us the means of recovery, when the powers of life are destroyed to the extent they seemed to be in the cases of Parkes and Milward, in the later stages of Lyssa.

ARTICLE VI.

Medical Topography of Droitwich.

BY MR. M. RICKETTS.

In giving some account of the Medical Topography of Droitwich, I shall state what I consider most worthy of notice, admitting that local peculiarities are generally met with, which are productive of efficient causes of variation in symptoms of disease.

Although Droitwich has proverbially the appellation of a dirty, smoky place, (which is chiefly caused from inferior coals being used in the manufacture of salt,) yet it is as generally admitted to be very healthy, and remarkable for instances of longevity. The poor, who are mostly employed in salt-making, live in a high degree of temperature, from the immense fires and steam they are exposed to in the process of evaporation, by which the salt is produced. They have sallow, unhealthy countenances; are generally thin, and have the appearance of being much older than they really are; yet I consider them less subject to disease than the generality of the poor otherwise employed; and it cannot have escaped the observation of the resident practitioners here, to mark the striking difference often met with in the favourable and rapid termination of alarming states of acute disease, compared with those labouring under similar affections, who live in the neighbourhood. The diaphoresis induced by the steam and high temperature before alluded to, may, in no inconsiderable degree, be productive of this salutary effect, and render unnecessary the more active antiphlogistic treatment usually adopted. Not less remarkable, and referrible to the same cause, is the comparatively easy process by which the female goes through the different stages of parturition, many thinking no more of a lying-in, than of an unimportant complaint, requiring but a few days' confinement.

* I am indebted to my learned friend, Dr. Pearson, for the following notice of another remedy, which was recently tried at St. Thomas's hospital, in a reputed case of lyssa. "The guaco, so much extolled as an antidote to the bite of poisonous serpents, (see London Medical Gazettee, No. 123,) was tried last week in St. Thomas's hospital. It appeared to act as a narcotic, but exerted no decided influence over the disease."—June 2nd.

Hepatic and dyspeptic complaints.—These nearly connected affections, are, as may be expected, very common amongst our salt-makers; but they admit of no peculiarity, excepting that irregularities in the biliary secretion require but very little mercury, and that, in chronic cases of hepatic disease, where its constitutional influence is required, the effect is soon produced by the adoption of a moderate course.

Bronchocele is very often met with, and the Droitwich brine has long been renowned as a topical application. I find that, in recent cases, the gland is considerably softened by its application night and morning, and that afterwards, the absorbents are more readily acted upon by the iodine ointment, the effect of which, when sufficiently persevered in, is most satisfactory.

Consumption has generally been said to be prevalent here, and, within the last eight or ten years, a considerable number of cases have certainly occurred; but in most of them, hereditary pre-disposition could be traced, and no uncommon exciting cause be accounted for. The lingering state of these patients, and the interest they excite, appear, more than in any other complaint, to attract the sympathy and attention of the kindly disposed inhabitants; and it is, in a great measure, to this cause, that consumption is said to be of frequent occurrence here.

Bronchitis is the disease with which the children are mostly affected. They do not well bear rapid depletion, and generally soon recover with purgatives and antimonials, assisted by that invaluable counter-irritant application, the ointment of tartarized antimony. When an unusually bad case occurs, the improper use of wine, (or what is a still greater evil,) some empirical narcotic, given with the view of quieting the child, is frequently discovered to be the secret cause.

Low fever is seldom absent from this place, and although rarely fatal, yet, from the distressing and long-continued debility it produces, together with the fact, that when typhus once gets into the dwelling of a family who are regardless of cleanliness, and who have no means of ventilation, that every inmate, sooner or later, may expect to become affected; this is rendered the most serious and alarming disease we meet with. The inhabitants of the Vines, a crowded part of the outskirts of the town, situated behind the salt works, are generally the first who are attacked, and this is undoubtedly caused from the heaps of filth, open sewers, and other sources of noxious exhalation, the morbid influence of which is so well known to operate as the remote cause of this fever, and it is much to be regretted that effectual means are not enforced for the removal of these public nuisances, and principal cause of the disease and misery so often found in this obscure and over-populated part of Droitwich.

With regard to the medical treatment, the usual plan adopted is, to give brisk purges at the commencement, followed by small doses of mercury and neutral salts, sufficient to keep up a healthy biliary secretion, and ensure the regular action of the

bowels. When the primary symptoms subside, and the tongue becomes moist, the quinine and sulphuric acid are taken with advantage. Blood-letting is not borne well by the class of persons under consideration, and unless cerebral congestion, or local pain, indicate the necessity, it is seldom had recourse to. I consider the principal cause of danger, which not unfrequently occurs during the state approaching to convalescence, to arise from the keen appetite so commonly felt, being improperly supplied with indigestible food; and I have sometimes felt justified in giving nauseating doses, as a means of counteracting this premature desire, until, by degrees, the digestive organs have sufficiently rallied to resume their usual functions.

Small-pox and vaccination.—I have nothing more to add to my observations on these diseases, published in the 3rd No. of the Midland Reporter, excepting that the anomalous eruption, (or to say the most of it,) mild modified small-pox, which occurred in several children who had been previously vaccinated, so far from increasing public prejudice against vaccination, has had a contrary effect, by shewing that, although from some constitutional peculiarity it was not entirely infallible, yet that its anti-variolous protecting influence was such as to disarm small-pox of all its formidable and terrific characters.

Diseases of old people.—I have no doubt but that the too generally received opinion of diseases of old people being dependent on a natural decay of the vital powers, has deprived many of them of at least those palliative medical means, calculated for their comfort and relief. In my professional attendance on the aged inmates of a noble and well-conducted charitable institution of this place, I have often the gratification of affording considerable assistance, by correcting the morbid and sluggish state of the secretions so commonly met with in advanced life; and I could even adduce several instances of unexpected recovery from disease in those who, from the cause I have stated, might have been shut out from the pale of medical aid.

ARTICLE VII.

MEDICAL JURISPRUDENCE.

I.—Case of dangerous Wound.

At Hereford assizes, March 31st, Robert Floyd, James Williams, and John Roberts, were put to the bar, Floyd charged with the murder of Francis Wellington, and the two others charged with aiding and abetting Floyd in such murder.

The counsel for the prosecution, in opening the case to the jury, stated that the deceased went to Hereford on the 3rd of November, from Lugwardine, four miles from the former place, to receive his quarterly pay as a Greenwich pensioner; after which he called at a public house, where he remained until ten

o'clock, when he left it, and was attacked and barbarously beaten on his way home, about a mile and a half from Hereford. He did not arrive at home until between four and five the following morning, without his hat; his head and smock frock covered with blood, and his money gone. He became senseless, and had medical assistance for his wounds. He had, however, previously laboured under consumption for some months, and finally died of it in the Hereford county infirmary, on the 3rd of March. There were, therefore, three questions for the jury:—First, was the deceased so beaten and robbed, as he (the learned serjeant,) had stated? Secondly, and a most material and delicate part of the inquiry it was; did the violence and injuries, which he must be assumed to have sustained, cause, or did they accelerate, his death? Thirdly, if the jury should find in the affirmative of the two first questions, then, were the prisoners the persons who inflicted the injury? Now Floyd, who was a Chelsea pensioner, was present when the pension-money was received at the Excise office. The other parties were present at the public-house, on the evening of the 3rd of November, and saw the deceased produce a sovereign in mistake, in payment for ale. Floyd left the house at nine o'clock, but the others stayed till the deceased went, at ten. He was then forward in liquor, and being a weakly, ailing man, the landlord recommended him to sleep in the house, which he declined. Roberts went out into the yard while he was going away, after which, he came back to Williams, and said, "he's gone." The learned serjeant concluded by proposing to call the medical witnesses, in the first instance, to settle the second question; because, if their evidence should bring the jury to the conclusion, that the prosecutor's death was not hastened by any bodily injuries he had received, as above stated, it would be useless to waste their time, and that of the court, in investigating the charge of murder.

James Eyre, Esquire, Mayor of Hereford, and a surgeon, was called. He stated that he attended the deceased professionally, for the first time, on 1st of May, 1829. He considered the deceased to be then decidedly consumptive. On the 4th of Nov. he was again called to him, and found him in bed, with four wounds on his head, each of about three quarters of an inch in length, inflicted by some blunt instrument. They could not have arisen from a fall on stones. One was on the right side of the forehead; another on the left side of the head; the third and fourth were near together, behind the left ear. He was partially sensible; feverish, with very quick pulse, and apparently in pain. He was in a very critical state. The next day he was sensible. He continued to complain of pain in the head, more or less, till his death, which happened the following March, and, in the opinion of Mr. Eyre, from consumption; nor could he, on mature reflection, positively swear that death was hastened by the injuries the deceased had received, though the pain might have contributed to wear him out.

This witness also stated that the body was examined at the infirmary, on the 5th of March. The scars of the four wounds before described, were found. The skull was not fractured. On the outer covering of the brain, called the dura mater, there was an appearance as if inflammation had existed there some time or other. It was of an oblong shape, an inch and a half long. The brain was a very good brain, and very healthy in its general appearance.

The lungs were very much diseased. The right lung was full of suppurated tubercles. The left lung was also nearly gone by disease. The pericardium adhered to the heart.

Mr. John Griffiths, junior, was next examined, and said that he was a surgeon, practising in Hereford, He had considered the deceased to be consumptive in June, and saw him after the injuries, when he complained of pain in the head. He was of opinion that the man died of consumption.

He attended the post mortem examination. The skull was not fractured, but there were morbid appearances in the brain, and serous effusions so near the external scars, that, in his opinion, they occurred from the outer injuries on the head. Moreover, he was of opinion that, if the morbid appearances in the brain had existed, independent of the disease in the lungs, they would have gone on to cause death. Though the wounds had healed, inflammation in the brain had never ceased. It was soft, moist, and discoloured, behind the ear, and had sustained a loss of substance.

In the opinion of this witness, Wellington's death took place at an earlier period, owing to the injury received on the 3rd of November.

Mr. Griffiths, senior, was next examined, who deposed that the deceased never failed to complain of his head, after the injuries were received, which the witness had an opportunity of verifying, by frequent attendance on him at his own house, and at the infirmary. The man had a cough, and Mr. G. considered, from what he expectorated, that he laboured under consumption for weeks before his death.

This gentleman agreed with the former witness, in stating that there were yellow and diseased patches, and a softened part of the brain, and likewise a red and inflamed appearance of the dura mater, and thought those appearances were connected with the injuries on the outside of the skull.

He did not think it possible that the appearances on the brain arose from the general state of disease of the heart and lungs. He never recollected to have seen such appearances on the head of a patient, though as highly diseased with consumption as the deceased. The appearances on the brain, he thought, arose from the injuries on the 3rd of November, and, he believed, accelerated death on the 3rd of March.

Dr. Bleek Lye stated that the patient was under his care at the Hereford infirmary, with diseased lungs, in June and October

before the injuries to the head were received. This witness deposed that the appearances in the head might have been occasioned by the disease of the lungs, and that unless the previous witnesses could assert, which they had not, that the injuries to the head aggravated the primary disease of the lungs, he could not say that they accelerated death.

Mr. Baron Bolland then put it to the jury to say, whether, after hearing the medical witnesses, the prosecution for the murder should be proceeded with, and the jury decided in the negative. The prisoners were afterwards indicted, and found guilty, for the assault.

Observations.—The circumstances of this delicate enquiry, seem to us particularly worthy of notice, inasmuch as the medical witnesses were, in this instance, placed in a situation of great difficulty, and one which required the exercise of unusual caution and circumspection, in delivering their sentiments to the jury. In the character of medical men, they had to perform an important duty to the public, at the same time that they obeyed the dictates of humanity, in having a proper feeling of mercy for the prisoners who were placed at the bar, and whose being found guilty of a crime of the deepest possible die, depended, in a great measure, upon their testimony. For, although it was evident, from all the evidence, that the deceased, previous to receiving the injuries on the 3rd of November, was affected with consumption, which must necessarily have terminated fatally, and although he survived the injuries on the head some months, yet, Lord Hale has laid down that, "if a man be sick of a disease, which may end him in half a year, and another strikes him a blow which hastens his death by the irritation and provoking of his former disease, the offence is murder." This delicate point could only be determined by medical evidence, and it made, as we before said, the responsibility of these parties to be very great.

All the medical witnesses agreed in this, that ever after the injuries inflicted on the head, to the period when death relieved him from his sufferings, the patient had been more or less afflicted with head-ache, and other symptoms of disordered brain; and they were also unanimous in stating that the diseased condition of the lungs and pericardium, was sufficient to explain the death of the patient. There were, however, other points in which they were not unanimous, particularly as regarded the state of the brain and its membranes. Mr. Eyre, for example, said, with respect to the dura mater, that there was an appearance as if inflammation had existed there *some time* or other; but the *brain was a very good brain.*

On the other hand, Mr. Griffiths, the younger, stated, and the statement was confirmed by his uncle, that there were morbid appearances on the brain, and serous effusion there. The brain, too, was *soft*, *moist*, and *discoloured*, behind the ear, near the seat of the external injuries.

They were also not unanimous in their opinion of the effect of the injuries in shortening the life of the deceased. Mr. Eyre stated that he could not swear that the death of the deceased was accelerated by the injuries he received on the 3rd of November; whereas, both the other surgeons deposed that they believed the inflammation produced in the brain, as the effect of the injuries inflicted on the 3rd of November, occasioned the death of Wellington at an earlier period than he would have died, if he had not received those injuries.

Granting that the brain was much inflamed, which we think the evidence of Mr. Griffiths and his nephew clearly prove, it may be certainly open to consideration, as the physician, Dr. B. Lye, intimated, whether or not the mischief arose in the brain sympathetically, which sometimes happens, and of which the indefatigable Louis, in his celebrated work, "Recherches sur la Phthisie," has placed some interesting facts on record; for, in his work, there are examples of consumption, in which not only the membranes, but the substance of the brain itself was diseased, being softened and discoloured. We also have very recently seen an example where, towards the close of consumption, symptoms of diseased brain came on, and after death, an examination being instituted, considerable mischief, of an inflammatory nature, was discovered in the brain and its membranes.

The case, however, which is now the subject of these remarks, was of a different nature. The head symptoms came on immediately after the injury, and continued more or less till the period of the death of the patient; moreover, the inflamed portions of the brain, and its membranes, corresponded with the marks of external injuries.

On the whole, then, we are led to the conclusion, that the inflammation of the brain was the consequence of the external injuries inflicted on the head, on the 3rd of November, and, as a consequence, we are led to think that Wellington died at an earlier period, from those injuries, than he would have done, if the powers of his constitution had only been gradually worn down by the disease that was going on slowly in the lungs.

We cannot, in conclusion, but remark, in justice to the Mr. Griffiths', that their evidence was such as reflected credit on their judgment and discrimination.

II.—Poisonous Gases.—Case of Death from inhaling Nitrous Ether Vapour.

On the 31st of March, an inquest, of an interesting nature, was held on the body of Elizabeth Stephens, at the house of Mr. Thomas, druggist, Hay, Breconshire, before the coroner, C. Ekins, Esq. The deceased lived in the service of Mr. Thomas, and went to bed in perfect health the night previously; but did not rise at her usual hour in the morning, in consequence of which, one of the family went to call her, but found the door fastened,

which being broken open, she was found dead, lying on her right side, with the arms folded across the breast as in profound sleep, and the features not at all disturbed.

Medical assistance was immediately procured, and as the material facts of the case were given by the medical attendants, before the jury, we shall give the result of their examination, and the verdict, and make such remarks as the circumstances seem to call for.

Richard Procter, surgeon, being duly sworn, stated that he, jointly with Mr. Hathway and Mr. Henry Procter, opened the body of the deceased, and found the coat of the stomach of the deceased a little inflamed, with a small quantity of fluid in it, not exceeding one ounce; there did not appear to be any gritty substance in the stomach. The intestines leading from the stomach appeared turgid. On further examination, the uterus was found enlarged, and its outer coat highly vascular. On its being opened, it was found to contain a male fœtus, indicating that she had been pregnant about three months. Witness further stated that he saw the deceased soon after the body was discovered, and remarked that a large jar, containing upwards of three gallons of spirits of nitrous ether, was broken, and the contents spilt about the room; and the room being small, and the atmosphere being highly impregnated by the said spirit, witness was of opinion that it was sufficient to have caused the death of the deceased.

Mr. Henry Procter stated that he was present at the examination of the deceased, and concurred with the former witness in his opinion as to the cause of death.

Mr. Nicholas Hathway, surgeon, stated that he was present at the examination of the deceased, and found the stomach and uterus in the state described by the first witness. He was further of opinion, that the impure atmosphere of the room, caused by the evaporation of so large a quantity of spirits, may have produced death, as the lungs were found in such a high state of congestion, as to prevent the passage of air through their cells. The witness could not account for the inflamed state of the stomach.

The verdict of the jury was, that the deceased died in consequence of the effluvia arising from the nitric ether, as described by the evidence.

Observations.—It is much to be regretted that in this very rare, and, we believe we may say, unparalleled occurrence, the examination of the body was confined to ascertaining the state of the lungs and stomach. The condition of the brain, the heart, and of the whole alimentary canal; the state of the blood, and also the appearances of the surface of the body, should undoubtedly have been mentioned, not only with a view of answering the great ends of the inquiry for which the jury was summoned, but also to throw light upon an important toxicological investigation.

There can, however, be no doubt, that the state of the body in this instance, so far as the examination of the lungs was carried,

corresponded with the morbid appearances left in the body after poisoning by carbonic acid gas. Dr. Schenck, medical inspector of Siegen, in reporting two cases of death caused by the vapours of burning wood, notices paleness of the countenance as a singular accompaniment of cerebral congestion; and calls the attention of medical jurists to the extreme calmness of the features as a general character of this variety of poisoning. The lungs, too, in all these cases, are distended with black fluid blood; but in addition to this, according to Portal, the vessels of the brain are gorged, and the ventricles contain serum.*

In Wildberg's collection of cases, there is a report on two people who were suffocated in bed, in consequence of the servant having neglected to open the flue trap when she kindled the stove in the bed-chamber; and in each of them Wildberg found all the appearances described by Portal. Mertzdorff has related a case of death from the same cause, in which, together with the preceding appearances, an effusion of blood was found between the arachnoid and pia mater, over the whole surface of both hemispheres.†

We cannot, for a moment, hesitate in believing that the spirit of nitrous ether is capable of producing, when inhaled largely, fatal consequences; as its vapour is known to exert all the influence of a powerful narcotic poison upon the system, and we have recently heard of an instance where sulphuric ether, (whose action is said to be less powerful,) being inhaled by a stout man, produced nearly fatal consequences. In this instance, the young man, by breathing for some time the vapour of sulphuric ether, fell into an insensible state, and remained almost apoplectic for some hours, and doubtless would have died had he not been removed from the situation in which he was inhaling the poisonous gas. As, however, the co-existence of inflamed stomach and pregnancy, in the case under consideration, was a circumstance in itself likely to raise suspicions, as to the manner in which the deceased came by her death, it became the more necessary for the medical witnesses to shew, 1st, that in every particular disclosed by a careful examination of every part of the body, the truth of their evidence was borne out by the investigations of previous examples where poisonous gases had occasioned death; and 2ndly, that no morbid traces were discoverable, which indicated that any narcotic, or other poison, had been swallowed.

We may here hazard an opinion we have long held, that the inquest system of this country does not work well. Had such a case as the foregoing occurred amongst our continental neighbours, a full and minute report would have been made of all the particulars connected with it, and nothing would have been left to conjecture, which a patient chemical and anatomical investigation could have disclosed. To the neglect, in this country, of

* See Dr. Christison on Poisons, p. 602.

† Consult Dr. Christison on Poisons, p. 603.

this kind of medico-legal investigation, may be attributed the meagre reference to works in our own language, on these important topics, whilst our neighbours, both in France and Germany, have succeeded in collecting together a large store of materials, the fruits of long continued labour, and indefatigable research. At this time, when our legal institutions are undergoing a strict scrutiny, which, in some instances, has led to wholesome reform, it is well worthy the consideration of our enlightened statesmen and lawyers, whether some material improvement might not be effected in the mode of conducting inquiries before the coroner.

ARTICLE VIII.

Case of Division of the right Carotid Artery, successfully treated.

TO DR. C. HASTINGS.

Sir,—I have the honour to acknowledge the receipt of your's of the 28th ult. and feel great pleasure in transmitting the particulars of the case you allude to, for insertion in your valuable publication.

A poor man, named James Hancock, æt. 24, resident in this neighbourhood, having been engaged and detected in an intrigue of gallantry, laboured under depression of spirits, and thrice attempted suicide by hanging, in consequence of which, fears were entertained by his family that he would again resort to some mode of self-destruction, and probably a more effectual one. On the evening of the 18th of May last, the man borrowed a razor from a neighbour, for the purpose, he alleged, of shaving himself. His parents having received information of this, watched him the more closely, and observed him going into an adjacent apartment, where he put his intentions into execution; but his courage failing him, he immediately ran into the room where the family were, pressing with all his might on the bleeding vessel.

This occurred about eight o'clock, p. m. and happening to be at a house within a few yards, I was with him instantly, and found he had made *two* incisions, in a transverse direction, the one about half an inch above the other; the uppermost and first incision extended from the left side of the throat, over the pomum adami, for about two inches; and the other, about three inches in length, cutting deeply into the trachea, and terminating immediately after dividing the right carotid artery and jugular vein; the artery was bleeding profusely, and the stream of blood was of about the circumference of a swan shot. I lost no time in securing the artery by means of a ligature, although it had receded considerably under the integuments. About a *minute and*

a half only had elapsed betwixt the perpetration of the desperate act, and the securing of the artery. Nevertheless, the hæmorrhage was excessive, and in this short space of time, an amazing quantity of blood was lost. The man was now apparently dying; his respiration laborious and protracted; eyes glazed; pulse nearly imperceptible, and a cold diaphoresis exuded all over the surface of the body. I immediately exhibited diffusible stimuli; had his feet put in warm water, and used all means possible to produce re-animation. When vitality was again manifest, I with great difficulty applied sutures to the incisions, owing to the hacked and ragged state of the parts. Having, at length, succeeded, and applied adhesive strips, I discovered venous blood oozing from the right jugular vein, (I imagined,) but it soon ceased. I ordered him weak brandy and water at intervals, and as soon as possible, removed him to bed, taking care to secure his head from falling back, and so tearing the wounds asunder. I visited him at half-past ten again, and found him rather feverish, at the same time very weak. Discontinued the brandy and water, and as his bowels had not been moved for two days, administered olei ricini 3vi. and gave a mixture of tincture of henbane and camphor julep, every three hours.

I saw my patient at ten o'clock on the following morning, when he complained of pain in the head and drowsiness. The bowels had been freely moved; tongue enveloped in a white coat; pulse weak and quick; considerable pain in the larynx and summit of the trachea; the wounded parts highly inflamed; deglutition extremely difficult; feet and legs cold as death, to which were applied heated bricks, and I ordered an anti-phlogistic lotion to the throat externally, composed of tincture of opium, acetate of lead, and water.

I now began to fear that his constitution would not recover from the shock it had sustained, and, as he was gradually becoming more debilitated, I exhibited, every hour and a half, ether, laudanum, and camphor julep; and occasionally sago, with a little sherry in it. He now began to recover strength, and at four, p. m. I found him much better, and the pain completely removed from his head. A glow of heat diffused throughout the system, and pulse considerably elevated, and more full. Discontinued the draught, and, from that time, gave him saline medicines principally, with calomel and opium at bed time occasionally.

On the 20th, I removed the dressings, and found the parts in a most healthy condition, and generating a "laudable pus," the inflammatory symptoms having considerably abated. The proper dressings, and the application of the above lotion occasionally, together with a proper attention to regimen in diet, exercise, &c. produced a salutary effect, and the man is now perfectly recovered, owing his life entirely to the immediate assistance rendered, and I have no doubt but that, in half a minute longer, he would have died from loss of blood. He is, however, now quite well, retaining the cicatrix as the only visible demonstration of his

imprudence, and, as it were, showing a conspicuous beacon in warning any who may have been inclined to follow his course, to avoid the shoals of dishonour and profligacy, which are the too frequent instigators of the act.

I have the honour to remain, Sir,
Yours, most obediently and obliged,
C. B. GARRETT.

Hanley, Staffordshire Potteries,
July 2, 1830.

ARTICLE IX.

Quarterly Report of the Birmingham Eye Infirmary.

BY MR. MIDDLEMORE.

Assistant Surgeon to the Eye Infirmary.

Ophthalmia, simple acute, 49; (a) ditto, chronic, 29; ditto, with pustules of the conjunctiva, 60; ditto, with ulcer, or pustule, of the cornea, 35; ditto, with purulent secretion, 13; ditto, purulent, 7; ditto, strumous, 25; ditto, rheumatic, 3; ditto, irritable, 7. Granular and cuticular state of the conjunctiva, 6. Increased and diminished convexity of the cornea, 4. Vascularity of the cornea, 9. Opacity of the cornea, 25. (b) Iris, vacillating state of, 3. Iritis, acute, with or without ulcer or opacity of the cornea or hypopion, 13; ditto chronic, 3; (c) ditto strumous, 6; ditto syphilitic, 1. Cataract, 5. Dislocation of the lens, 6. (d) Amaurosis, of various kinds and degrees, 13. Glaucoma, 2. Ptosis, 1. Inflammation of the palpebræ, 8. Tinea, 33. Lippitudo, 4. Trichiasis, 3. Ectropion, 4. Tumours in the eye-lids, 11. Carcinomatous and other malignant ulcerations of the eye-lids, 4. Inflammation of the lachrymal sac and duct, 6. Fistula lachrymalis, 4. Wounds and other injuries of the eye-ball and its appendages, 16.

a—The use of gas, in some manufactories, has been very injurious to the eyes of many of our artisans, more particularly when used without being surrounded by a glass; the flame being then wavering and variable, sometimes approaching very near to the eyes, and yielding a brilliant light; at others, exciting scarcely a perception of light to an eye previously subjected to one of an exceedingly luminous quality; after having investigated the cases of many patients, who have suspected the cause of the injury, I am induced to believe that amaurosis and chronic ophthalmia, are sometimes occasioned by working by the powerfully-concentrated light, produced by the combustion of gas; and in accordance with this conviction, I am in the habit of recommending those workmen whose eyes are becoming seriously defective from this cause, but whose subsistence depends on the continuance of their labour, to procure a glass similar to that of a Reading lamp, which not only confines the flame, but steadies and more equally diffuses the light.

b—The iris has been said to vaccillate, in consequence of a want of support, thus, if the anterior chamber be unusually large, the lens absorbed, or the vitreous humour lessened in quantity or diminished in density, the iris may be expected to assume that action called vaccillation, quivering backward and forward as the movement of the body may direct it, uninfluenced, as regards the steadiness of its motion, by its own natural contractions. Mr. Guthrie mentions his acquaintance with a patient, in whom the iris had acquired this unsteady movement, the eye being apparently healthy; he also remarks that the iris will frequently maintain this intestine kind of motion, although the pupil be closed. Dr. Frick, when alluding to the symptoms of solution of the vitreous humour, observes, "the pupil is much contracted and irregular; the iris loses its irritability; very often it is found tremulous, or is seen to vaccillate backwards and forwards, on any motion of the eye-ball." He further remarks, that in such cases, the lens generally becomes opake and softer in its texture, but this, I imagine, must be a mistake, a soft lens is almost invariably more diffused than a hard one, and is observed to be so close to the iris, as to interfere with the freedom of its action; the support which the iris thus receives, or rather, the pressure that it endures, would, according to the old doctrine, be sufficient to prevent the possibility of vaccillation. Mr. Lawrence observes that, when the vitreous humour is converted into a fluid state, the iris acquires a peculiar tremulous or oscillatory motion, in consequence of the loss of its natural support. Many writers upon this subject have expressed the same opinions. Having frequently seen this unsteady action of the iris follow an injury, which has produced the formation and absorption of cataract, and, at the same time, either torn the sclerotica or iris; and observed it succeed reratonyxis, or the posterior operation of solution when the iris has been wounded, or the sclerotic punctured in the situation of one of the ciliary nerves; and having known patients so affected, who have never met with any injury to the eye, nor discovered any defect of vision, nor required the aid of spectacles; and having also observed it even when the pupil has been closed, where no want of support could be presumed to exist; and, on the contrary, having known this symptom wanting in cases of extraction, where the lens, and a large quantity of the vitreous humour, have escaped, and also, generally, when this operation has been well performed, the iris not being injured either by the operation or the passage of the lens; and having also remarked it much more commonly follow the posterior operation of solution than extraction, I am induced to believe that the notions commonly entertained upon this subject are erroneous. I believe vaccillation of the iris to occur as the product of sympathy or irritation, or some injury to the lenticular ganglion, or other part of the nervous apparatus of the iris; and that it can, in no instance, be fairly alone referred to a want of that support which it has been said to receive from the posterior contents of the globe. The membrane of the aqueous humour, which covers the front and back surface of the iris, appears not only to be subservient to the purposes of secretion and absorption, but to render the same support to the iris, as fasciæ afford to muscles. I am induced to allude particularly to this circumstance, from having remarked a vaccillating condition of the irides in a palsied individual, whose eyes were, in other respects, perfect, and who had neither received any accident, nor undergone any operation, in either organ; and from having

occasionally noticed the same occurrence after the posterior operation of solution, where only a portion of the cataract, too small to deprive the iris of any appreciable amount of support, had been absorbed, where, it is presumed, one of the ciliary nerves had been in some way injured. My respected friend, Mr. Wickenden, has related to me the following particulars, as noticed in the eyes of an intimate acquaintance. A gentleman, rather advanced in life, has been slightly palsied for some years, and has a vaccillating state of iris, although vision, considering his age, is remarkably strong; he has met with no accident, and has been the subject of no operation to either eye; he has never worn spectacles, and is neither far nor near sighted. I cannot learn whether or not this condition of iris existed prior to the general affection of the muscular system; nor can I ascertain how far it has increased with the progression of the more important malady. This subject is one well worthy investigation, but I shall content myself with this cursory notice, in the hope of drawing towards it the attention of others, until a more intimate acquaintance with cases of this description, enables me to enter upon minuter details.

c—The treatment I formerly recommended in this disease, has been employed in my private practice with great advantage, as well as at the infirmary; in several instances, where patients have been freely salivated and bled, where the system has been lowered by an abstinent diet, and where other measures, calculated to reduce active inflammatory action, have been adopted, the inflammation continuing to increase, rather than yield to such treatment, my system of management, (of which your last number contains an epitome,) has appeared to be productive of much alleviation, and even rapid recovery, and I feel increased confidence in the remedies then proposed, and a firm conviction that salivation will not, in the majority of these instances, be otherwise than injurious to the constitution, and inefficient, as a remedy for the disease.

d—Since you did me the honour to publish my opinions respecting the utility of strychnia in certain cases of amaurosis, I have had an opportunity of increasing my acquaintance with its powers as a remedy in this particular class of diseases; the experience so acquired, confirms, in every respect, my former estimate of its value. Unwilling to incur the risk of injuring the reputation of so useful a medicine, by injudiciously extolling its merits, and anxious only to establish its claim to the more general notice of practitioners, as a remedy which, in many instances, has succeeded in restoring vision, after every other plan of treatment has failed; I have been studiously careful to abstain from every appearance of extravagant eulogy. Having previously pointed out the cases that seemed to me likely to be benefited by its use, and those in which its application is counter indicated; and having described the best mode of applying it, and the doses suited to effect the object in view, without injuring the health or endangering the occurrence of severe symptoms; and having stated the success which had, in many cases, followed its employment; I will only add that, if a proper case be selected, its employment cautiously ventured upon, and carefully watched, its absorption ensured by sprinkling it upon a perfectly raw surface, preventing it from being removed by friction and other causes, and not mixing it with a mass of greasy matter, it will prove a powerful addition to our means of combating this wretched malady.

It was stated, in a former paper, that some patients would not bear its application: and, in two or three instances, I have found it productive of so much head-ache and spasm, that it would have been highly improper to persevere in its use; whilst others, who were even much benefited by it, refused to permit its repetition, on account of the severe local pain it excited. In one remarkable care of amaurosis, dependent on an enfeebled condition of the retina, where the application of the strychnine upon the blistered surface, over each eye-brow, occasioned intense anguish; it use was suspended, the bowels well opened, and the health improved, so as to enable me to resume its use, and eventually to conduct the patient to what he considered a perfect cure; but, unfortunately, it was found necessary to continue the use of the remedy to preserve vision, its suspension being invariably followed by loss of sight. Two of the cases forming a part of those on which I founded my opinions of the value of strychnia, in my last report, have also experienced a similar change, and it is but justice to acknowledge a fact which must be borne in mind, when estimating the value of this most excellent remedy.

ARTICLE X.

Report of the Worcester Infirmary.

BY MR. HERBERT COLE, HOUSE SURGEON.

The number of patients treated in the Worcester General Infirmary, from the 1st of July, 1829, to the 1st of January, 1830, (exclusive of those previously on the books,) amounted to 531; of these, 225 were medical, 306 surgical cases.—Males, 295; females, 236.—In-patients, 275; out-patients, 256.

General Results.—Cured, 226; relieved, 38; discharged at their own request, 2; for irregularity, 51; dead 19. Remaining on the books, January 1st, 1830, 195.

Diseases.—Abscess, common, 5; psoas, 1; asthma, 2; amenorrhœa, 11; aneurism, 1; anomalous, 22; anasarca, 3; bronchocele, 2; burn, 4; cephalalgia, 8; concussion of the brain, 1; contusion, 17; cutaneous eruptions, 4; calculus vesicæ, 3; cynanche tonsillaris, 5; diarrhœa, 5; diabetes, 1; dislocation, simple, 1; dropsy of abdomen, 1; thorax, 2; tunica vaginalis, 1; dyspepsia, 29; exostosis, 2; eye, diseases of, 19; fever, continued, 4; intermittent, 1; fistula, 2; fracture, simple, 10; of extremities, 12; compound, of extremities, 2; ganglion, 2; gonorrhœa, 2; hæmorrhage from lungs, 1; from uterus, 2; hare lip, 1; heart, organic disease of, 3; hæmorrhoids, 1; hernia, 36; hypochondriasis, 1; hemiplegia, 6; inflammation of the bronchi, 20; liver, 19; lungs, 30; peritoneum, 5; joints diseased, 19; leucorrhœa, 4; lumbago, 3; phthisis pulmonalis, 1; neuralgia, 2; pneumonia, 2; psoriasis, 3; rheumatism, acute, 3; chronic, 19; scald, 1; schirrus, 1; sciatica, 1; scrofula, 4; spine, diseases of, 4; stricture of urethra, 3; syphilis, 12; testes diseased, 5; tracheitis, 3; tumour, 7; ulcers, 51; wounds, 32.

Case I.—Purulent Ophthalmia.

April 15, 1830.—John Griffiths, a fine child, six weeks of age, was brought here with purulent ophthalmia of both eyes, the cornea of left eye quite opaque from the ulcers which covered it; the right eye but little better. The eyes have been affected ever since the child's birth. The mother had leucorrhœa at the time it was born. The child is now out of health, being much purged. Its stools green, sour, and slimy. ℞ Argenti nitratis, gr. x. aq. distill. f. ℥i. m. f. gttæ. oculis b. d. instillandæ. Sumt. 6tâ qq. horâ hydrarg. c. cretâ gr. vi. Hydrarg. submur. gr. ¼ partem. Emplast. lyttæ nuchæ applicetur.

21st.—Child's health is somewhat improved. The stools are of a better colour, and not so frequent; discharge not so profuse from the eyes, which are less inflamed. Contin. guttæ; omitt. pulveres. Cap. solut. magnes. sulph. f. ℥ss. pro re natâ.

25th.—Eyes very much improved; left eye, which was the worst, is now nearly well. The child gets flesh.

26th.—Repet. emplast. lyttæ nuchæ.

In about a month after its admission, the child was discharged, cured; the corneæ of both eyes being quite transparent, and the sense of vision quite restored.

Case II.—Psoas Abscess.

Feb. 1, 1829.—W. S. æt. 22, a married man, a wheelwright, has a swelling just below Poupart's ligament of left thigh, apparently beneath the fascia in the course of the psoas muscle; there is considerable impulse in it when he coughs. About two years ago, he felt a gnawing pain in the small of his back; the pain left him towards the succeeding winter, but his strength has failed him since then. He was well purged and bled previous to his admission here. General health, previous to this, has been good.

24th.—About 9 oz. of light brown serous fluid were evacuated, which had no particular odour, but a saltish taste. The wound was closed. Ordered to lie in bed. Sum. ol. ricini, p. r. n.

March 1.—The tumour having attained its former size, was re-opened, and 6 oz. of the same sort of fluid were evacuated.

4th.—Is very thirsty and feverish; appetite bad. Complains of a pain shooting up into the shoulder, and down into the skin of left side. Bowels open. ℞ Quininæ sulph. gr. iij. Infus. rosæ f. ℥iss. M. sumt. ter die.

17th.—Tumour considerably less; appetite improved; bowels open; tongue clean. Made out-patient. Sumt. quininæ sulph. gr. iij. formâ pilulæ, b. d.

25th.—Sumt. liq. potassæ, f. ℥i. b. d. Emplast. lyttæ tumori femoris appl. He continued to improve under this treatment, till the 30th of May, when he was discharged cured; the whole of the fluid being absorbed, and his general health being good.

Case III.—Dangerous Wound of the Face.

May 16, 1829.—T. S. æt. 16, was struck with a coal shovel on the left temple, about an inch from the corner of the eye. The blow caused a wound of 1½ in. in length. The outer table of the external angle of the frontal bone was struck off, and only detained by muscular attachment. The wound being enlarged, the bone was removed. The edges of wound closed with plaister. The boy was very sensible, and gave a clear account of the accident.

17th.—No pain in head; pupils not dilated; bowels confined. Sumt. mist. sennæ c. usq. ad catharsim.

18th.—Pulse 104, full; bowels well opened by the medicine; feels a dull pain in wound. Ft. v. s. ad f. ℥xx. Sumt. iterum mist. cathart.

19th.—Pulse 72; tongue cleaner; bowels open; no pain in head or eyes. Thinks himself better.

20th.—Improving. Sumt. mist. cathart p. r. n. Pulse 90.

28th.—Wound healed; all symptoms favourable. Discharged on the 30th, cured.

Case iv.—Compound Fracture of the Nasal Bones.

May 13.—Robert Brindley, æt. 10. Compound fracture of the bones of the nose, from a kick of a horse; the bones were elevated by a female sound, and the wound dressed with strips of plaister. No unfavourable symptoms came on, and as soon as the wound was healed, he was discharged, cured.

ARTICLE XI.

Parochial Returns of Births, Marriages, and Burials, that have been registered in the several parishes of the city and suburbs of Worcester, including those of the several congregations who dissent from the Established Church, between the 1st of January, and the 1st of April, 1830.

Births, 303; Marriages, 76; Deaths, 208.

Women relieved by the Lying-in Charity of Worcester, from April 29, 1829, to April 30, 1830—335. Children born, 345; twins, 10; still-born, 17; died within a month, 27.

NOTICES AND ACKNOWLEDGEMENTS.

We are compelled, for want of space, to omit some important articles, which will duly appear in the next No.

Periodical Journals received in exchange since our last No. was published.

The London Medical Gazette, to the present time.

The London Medical and Surgical Journal, for May, June, and July.

The American Journal of the Medical Sciences, for November.

The North of England Medical and Surgical Journal, No. I.

*** It gives us much gratification to welcome the first No. of a work, which promises to be highly valuable as a provincial fellow-labourer. We heartily wish every possible success to so laudable an undertaking.—*Editors.*

The Tenth No. will be published on the 1st of November, and the succeeding Numbers Quarterly.

All Letters and Communications, addressed, free of expense, (under cover,) to the Editors, at the office of the Worcester Journal, will receive immediate attention.

THE MIDLAND

Medical & Surgical Reporter,

AND

TOPOGRAPHICAL AND STATISTICAL JOURNAL.

HOMO, NATURÆ MINISTER ET INTERPRES, TANTUM FACIT ET INTELLIGIT, QUANTUM, DE NATURÆ ORDINE, RE VEL MENTE OBSERVAVERIT; NEC AMPLIUS SCIT, AUT POTEST.—BACON, NOVUM ORGANUM.

No. X. NOVEMBER, 1830.

On the State of the MEDICAL ART among the JEWS, as recorded in the BIBLE.

BY J. K. WALKER, M. D., HUDDERSFIELD.

[CONTINUED FROM PAGE 173.]

I HAVE stated the great difficulty there existed in arriving at any accurate conclusion, on many points relating to the natural history of the Hebrew nation, in the absence of sufficient light to guide us in this interesting research. It is the want of such information, that has prevented us from seeing the full beauty and meaning of many incidental references to beasts, birds and plants, to be met with in various parts of holy writ, as well as the propriety and aptitude of many allusions to their nature and habits. I felt the truth of this, in the cursory glance I took, in a former number, of the principal vegetable productions recorded in Scripture, and the consequent uncertainty there was in deciding upon the proper name for many of the species there mentioned. The same difficulty obtains in the biblical allusions to the mineral kingdom. The only two metals recorded in Scripture, as in use anterior to the deluge, are brass and iron. In the days of Abraham, silver was used in transacting the commerce of the country, for in negotiating for the purchase of a burying place, it is said that Abraham weighed 400 shekels of silver, current money, with the merchant, and at the same period gold is mentioned as used in female ornaments. Lead, also, is mentioned, with five other species of metals, in Numbers, xxxi. 21, "only the gold and the silver, the brass, the iron, the tin,

and the lead."* In very ancient times, copper was used for the same purposes for which we now use iron. Job speaks of bows of steel, as our version calls it, but the original word "nehesh" will not bear any such construction, but means copper; and when the Philistines had Sampson in their power, they bound him with fetters of copper, which is also erroneously translated brass.† Tin is frequently mentioned in the Old Testament. That the properties of tin, as well as other metals, were not unknown to the Jews, seems probable from various passages. Silver, for instance, is said of all the metals to suffer most from an admixture of tin. Does not this shew the propriety of the denunciations of Jehovah, by the prophet Isaiah, ch. i. 25, for having compared the Jewish people to silver, he declares, "I will purge away thy dross, and *remove thy particles of tin*," which appears to signify that God would purify the Jews from all reprobate admixture. Of antimony,‡ which is in some places termed phuph, in others, cohol; the use appears to have been common among the Jews. It seems expressly to have been used as a kind of paint, with which the women blackened their eyes. And it is most probable that it was originally used for the relief of certain disorders of the eyes, and afterwards as an ointment, for I find its application commended by Galen, as useful in strengthening the eyes, οφθαλμυς δε τονωσεις τῳ δια τυ φρυγια λιθυ χρωμενος ζηρῳ κολλυριῳ. Many other mineral productions and precious stones are named in Scripture; such as agate, bdellium, carbuncle, chalcedony, diamond, jasper, onyx, emerald, sapphire, topaz,§ &c. which all

* Of the mode of working these metals, we have no account; nothing but incidental allusion. It is said, for instance, in Ezekiel, "that the house of Israel is become as dross, all of them are as copper and tin, and iron, and lead, in the midst of the furnace they are as the dross of silver. Therefore, because ye are all of you become dross, I will gather you into the midst of Jerusalem, as men gather silver and copper, and iron, and lead, and tin, into the midst of the furnace, to blow the fire upon them, to melt them."

† The word brass occurs frequently in our translation of the Bible, but that is a mixed metal, for the making of which we are indebted to the 13th century. There can be little doubt that copper is the metal intended.

‡ Ezekiel, describing the irregularities of the Jewish nation, under the idea of a debauched woman, says, "thou didst dress thine eyes with *cohol*, which the Septuagint render εστιβιζυ τυς οφθαλμυς σου.

§ For an account of all these, and the passages where they are introduced, vide Dr. Harris, whose work I have already mentioned. There is a remark of Bishop Patrick on the subject of the lily, so beautifully introduced in various parts of Scriptare, to which, as it is new to me, I beg to advert in this place. As in Cantic. v. 13, the lips are compared to the lily; he supposes the lily here instanced, to be the same which, on account of its deep red colour, is called by Pliny "rubens lilium," and which, he tells us, was much esteemed in Syria. Such may have been the lily mentioned in Matthew vi. 28-30, for the royal robes were purple. "Consider the lilies of the field, how they grow, they toil not, neither do they spin, and yet I say unto you that even Solomon in all his glory was not arrayed like one of these."

shew to what a pitch civilization and refinement had attained, and with these, a corresponding proficiency in the arts and sciences. The animal kingdom, too, lends its stores to enrich and illustrate the writings of inspiration. The instances are too numerous to be mentioned here. The lion, the elephant, the camel, the eagle, hyena, fox, wolf, and many other beasts and birds are either expressly mentioned or incidentally alluded to. In all these cases, a knowledge of natural history is necessary, to appreciate the force and propriety of certain expressions, and in some instances to understand the meaning of the passage. In that passage, for instance, where it is said, "if he shall ask an egg, will he offer him a scorpion;" the beauty of the passage, in part, depends upon a circumstance not known to every reader. The scorpion is here contrasted with an egg, on account of the oval shape of its body. The body of the scorpion is very like an egg. Bochart has produced testimonies to prove that the scorpion in Judæa were about the bigness of an egg. I could adduce many examples of a similar kind, which strikingly evince how much the beauty of some passages, and how much even the sense of others is lost or impaired by inattention to the auxiliary light of natural history. Enough, however, has been said in this and the preceding paper, to draw the attention of the reader to this interesting subject. I shall now resume the discussion of the various diseases of which mention is made in Holy Writ, and among the first of these, we find the leprosy recorded as peculiarly prevalent among the Israelites. There were many stages, and many varieties, of the disease, some of which were regarded as infectious, others not so.

Whoever would understand this subject thoroughly, must study the diagnostic symptoms of leprosy, and other analogous diseases, as enumerated in the 12th chapter of Leviticus. The following are some of the directions laid down by the divine lawgiver. If there appeared a rising, a scab, or bright spot, and the hair was turned white, and the eruption deeper than the skin, this was pronounced to be leprosy. It sometimes, however, happened, that in its early stage, the bright spot was to appearance not deeper than the skin, and the hair not turned white; in this case it was bound up for seven days, when, if no change had taken place, another seven days were permitted to elapse, before it was again examined by the priest. If it was not a case of leprosy, the eruption commonly assumed a darker appearance, and did not spread, and the patient, in this case, was considered clean; but if the priest saw clearly that the scab had spread in the skin, it was regarded as an incipient leprosy. In a confirmed leprosy, the eruption was white, as well as the hair, and there was an appearance of "*quick raw* flesh." This last symptom was regarded as decisive, for however much the leprosy spread, and however long it had lasted, yet, without the raw flesh, it was not regarded as a case of unclean leprosy. The disappearance of the rawness altered its character, and the afflicted man was

pronounced clean. It is evident that in a leprous diathesis, almost any eruption, or cutaneous lesion, might terminate in leprosy; and accordingly, we find Moses laying down rules for this class of cases, in which the above distinctions are repeated. Leprosy, in such habits, frequently supervened on a common boil, or after a burn, and the appearance of a white spot or white hair, was conclusive testimony of the unclean malady. If in any sore on the head, which was deeper than the skin, thin yellow hair was seen, it was regarded as a leprous scull. There are also various instructions given in this chapter, which were to guide the priest in detecting the leprosy in clothes. The* *infected part is described as greenish* or reddish, and the garment so infected was ordered to be burnt, if, after seven days, the infection had spread; but if it had not spread, it was only washed. If no change of colour ensued after such washing, it was then burnt; but where the colour of infection disappeared, after a second washing, it was pronounced clean.

We have also similar directions in cases of house leprosy, where the infection appeared on the walls of the house with hollow streaks, of a greenish or reddish colour, which penetrated the wall. If, after the lapse of seven days, the infection was spread, the law was, that the stones so infected should be taken out of the building, and the adjacent parts of the wall scraped, and the dust removed without the city; other stones and mortar were introduced in their place. But if, after such repair, the infection re-appeared, the house was pulled down, and its materials, stone, mortar and timber, were all carried out of the city. Such were the laws for leprous infections, for the leprosy of a garment, and of a house.†

We have nothing in the Mosaic account of leprosy, that assimilates it to elephantiasis, the symptoms of which, such as thick skin, fierce and staring eyes, hoarse voice, and falling of the hair, have no place in the Levitical description, yet how frequently are the two diseases confounded. Dr. Good, who brought the weight of his great learning to its consideration, has removed

* As I cannot give any satisfactory comment on this point, I shall only refer the reader to the original text.

† In Levitic. xii. the period of a woman's confinement in child-bed, was a period of uncleanness. For a space of seven days, while the lochia were present, she was considered in the same light as a woman *removed;* afterwards she was regarded as clean, but still confined to her house, on the birth of a daughter for 33 days, and on that of a son 66. Even the catamenia were regarded as impurities, and that this was the case in the infancy of the world, is clear from the answer of Rachel, in the 31st Genesis, 35th verse. And where there was a running issue, (as our version calls it,) the person so infected was unclean, as well as whomsoever he touched. The bed on which he lay, the stool or bench on which he sat, became unclean. Moses gave no laws relative to the plague, which is often mentioned in Scripture, and commonly rendered pestilence.

much of the obscurity attached to this subject. The cutaneous blemishes which had a tendency to terminate in leprosy, and which are enumerated in Leviticus, are briefly arranged by Dr. Good as follows :—

1. Saat—Herpes or tetter, ϑλη, Sept ; an irritated cicatrix.
2. Saphat—Psoriasis, or dry scale ; dry sahafata.
3. Netek—Porrigo, or humid scale ; moist sahafata.
4. Berat—Leuce, bright white scale ; the critical sign of contagious leprosy.
5. Boak—Alphos, dull white scale ; the critical sign of uncontagious leprosy.
6. Nega—Ictus, blow or bruise, ἁφη Sept.
7. Shechin—Furunculus, or boil, as in Job ii. 7.
8. Mecutash—Anthrax, or carbuncle, literally a fiery inflammation.

It appears, from the Mosaic account, that the bright white leprosy was the most obstinate of all the forms which the disease assumes. Some change took place in the rete mucosum, from the white appearance of the hair. The pathognomic characters dwelt upon by the Hebrew legislator, were a glossy white and spreading scale, upon an elevated base, the elevation depressed in the middle, but without a change of colour, the black hair on the patches, which is the natural colour of the hair in Palestine, participating in whiteness, and the patches themselves perpetually widening their outline : a concurrence of the whole of these characters was necessary to constitute a *tsorat*, or malignant leprosy.* Common as this form of leprosy was among the Hebrews, during and subsequent to their residence in Egypt, there is no evidence to shew that it was known among that people antecedently. It is more probable, the degradation and thraldom to which they were reduced, the nature of their labour under a burning sun, with their bodies continually exposed to the dust of brick fields ; to which may be added, impoverished diet, that all these proved predisponent causes of cutaneous diseases. From the Hebrew word tsorat, the Greeks borrowed the term psora, and it is probable, as Dr. Good observes, that psora, when first introduced into the Greek tongue, was of similar import to the Hebrew ; but it soon gave way to the older term lepra, and having thus lost its primitive signification, it seems to have wandered in search of a meaning, being used variously at different

* The boak mentioned in Levit. xiii. 39, was an uncontagious leprosy. We are informed in Niebuhr's Description de l' Arabie, p. 119, that one of the species of leprosy, to which the Arabs are subject, is by them still called bohak, but that is neither contagious nor mortal ; and in the note, p. 120, Forskal adds, " The Arabs call a sort of leprosy, in which some little spots shew themselves here and there on the body, behaq, and it is, without doubt, the same as is named boak—Lev. xiii." He further says, " I saw at Mokha, a Jew who had the leprosy 'bohak.' The spots of it are of unequal sizes ; they do not appear shining, they are but very little raised above the skin, and do not change the colour of the hair ; les taches sont d'un blanc obscur tirant sur le rouge ; the spots are of an obscure white, inclining to red."

times, sometimes to express one meaning, and sometimes another, till at last it was adopted to designate the psoriasis of the present classification—vide Dr. Good.

By attending to the account given of the sufferings of Job, it seems probable that the disease under which he laboured, was a modification of elephantiasis. He was smitten with sore boils from the sole of his foot to the crown of his head. His skin was broken and loathsome, and covered with an eruptive disease, with *burning pains in the bones*, and great swelling, and so *enlarged was his body*, that, to use his own language, "by the great force of my disease is my garment changed, *it bindeth me about as the collar of my coat;* my skin is black upon me," &c. The emerods is another disease frequently alluded to in the Old Testament, and which probably resembled in its character the hæmorrhoidal tumors of modern nosologists.* We have diseases of the bowels, consumption, dropsy, epilepsy, fevers, gout, gonorrhœa, and other maladies, either mentioned or alluded to, as well as the operation of circumcision, castration, &c. It is probable that the application of herbs to wounds and sores, was known to the Hebrew faculty; we know that oils and emollient applications were. This may be inferred from the following passage of the prophet Isaiah; "from the sole of the foot even unto the head, there is no soundness in it; but wounds, and bruises, and putrifying sores; *they have not been closed, neither bound up, neither mollified with ointment.*" The passage in Proverbs iii. 8; "it shall be health to thy navel, and marrow to thy bones," is another illustration borrowed from our art, and alludes to the practice prevalent in eastern countries to this day, of external medicaments (as plasters, ointments, oils, &c.) applied to the abdomen.

The direction of Isaiah to Hezekiah, when labouring under a fatal disease, is familiar to every one; "take a lump of figs, and they took, and laid it on the boil, and he recovered." In the story of Tobit, vi. 5—viii. 13, the gall of a fish is mentioned as being used to cure his father's eyes. Pliny, indeed, in his natural history, says the same thing; the gall of a fish, ad oculorum medicamenta utilius habetur. Lib. 28, c. 10. In Ezekiel xlvii. 12, it is said of a tree "that the leaf thereof shall be for medicine." No person had better means of knowing the state of the medical art among the Jews than Josephus, and, as it is a part of his history in which he could have no private feeling to gratify, and no prejudice to encounter, his incidental allusions to our art, must be received as valuable auxiliaries in illustration of this subject. Many such allusions might be selected; one or

* Deut. xxviii. 27.—1 Saml. 5, 6, 9, 12.

In Deut. xxviii. 27. "The Lord will smite thee with the botch of Egypt, and with the emerods, and with the scab, and with the itch, whereof thou canst not be healed. The Lord shall smite thee with madness and blindness, and astonishment of head."

two will be sufficient for my purpose, and for others, the reader cannot do better than consult the work itself. After Herod had murdered Mariamne, he was plunged into the deepest remorse, "and in a few days," says Josephus, "he fell into a most dangerous distemper, and had an inflammation upon him, and a pain in the hinder part of his head, joined with madness; and for the remedies that were used, they did him no good at all, but proved contrary to his case, and so at length brought him to despair. All the physicians also that were about him, partly because the medicines they brought for his recovery could not at all conquer the disease, and partly because his diet could be no other than what his disease inclined to, desired him to eat whatever he had a mind to, and so left the small hopes they had of his recovery in the power of that diet, and committed him to fortune." And in another place, when Josephus himself was labouring under sympathetic fever, from an accident he had incurred, he says, "I therefore sent for the physicians, and while I was under their hands, I continued feverish all that day, and as the physicians directed, I was that night removed to Taricheæ." Wherever Josephus alludes to our profession, there is nothing in his expression to lead the reader to suppose that recourse to our art was a thing of infrequent occurrence, but he speaks of it as a matter of course, whenever the health was such as to stand in need of aid.* It is much to be lamented, however, that, with such ample means in his power, he has left so few materials which are of use in disclosing to us the state of the medical art, or the sciences connected with it. Of chemical knowledge there is nothing to shew any advancement; of anatomy, the continual recurrence of sacrifices gave them a better acquaintance; but of botany he makes but little mention. In describing, indeed, the golden crown, which adorned the head of the high priest, he states that from it "there arose a cup of gold, which resembled the herb which we called saccharus, but those Greeks, that are skilful in botany, call hyosciamus. Now lest any one that has seen this herb, but has not been taught its name, and is unacquainted with its nature, or having known its name, knows not the herb when he sees it, I shall give a description of it. This herb is oftentimes in tallness above three spans, but its root is like that of a turnip, (for he that should compare it thereto would not be mistaken,) but its leaves are like to the leaves of mint, out of its branches it sends out a calyx. Now the fruit is preserved by this coat of the calyx, which fruit is like the seed of the herb sideritis, it sends out a flower that may seem to resemble that of a poppy." And speaking of lepers, Moses, he says, suffered them not to come into the city at all, nor to live with any other, as if they were in effect dead persons; but if any one had obtained, by prayer to God, the recovery from that distemper, and had gained a health-

* Josephus was himself a priest, yet we find him sending for the physicians, which shews that the practice of medicine was a distinct profession.

ful complexion again, such an one returned thanks to God, with several sorts of sacrifices. The pestilence inflicted upon the Hebrews, as a mark of divine displeasure, for the sins of David, occasioned a great mortality among that people, for they did not, says Josephus, die after one and the same manner, or so that it might be known what the disease was, for it "carried them off by ten thousand causes and occasions, which those that were afflicted could not understand; for one died upon the neck of another, and the terrible malady seized them before they were aware, some dying immediately with very great pains and bitter grief, and some were worn away with their distempers, and had nothing remaining to be buried, but at the period when they fell, were *entirely macerated;* some were choked, and greatly lamented their case, as being also stricken with a sudden darkness; some there were, who, as they were burying a relation, fell down dead without finishing the rites of the funeral.* In this plague, which lasted but a few hours, 70,000 perished. I ought to apologize for transcribing so copiously from an author who, probably, is in the hands of most of my readers, but as it was necessary to my subject, and as other authors have said so little upon it, there was no alternative, but to make use of the best means in my power. From the same author, it is easy to observe that the principal reliance of the Jewish physician, was upon herbs, rarely on minerals, for the treatment of diseases. Cold bathing was another remedy, which, indeed, formed part of the Levitical institutions.

That warm bathing was prescribed by the Jewish physicians, we have the evidence of Josephus more than once; and in the case of Herod the Great it was recommended. The symptoms which attacked that impious monarch, shall be told in the words of Josephus. "The distemper seized upon his whole body, and greatly disordered all his parts with various symptoms, for there was a great fever upon him, and an intolerable itching over all the surface of his body, and continual pains in his colon, and dropsical tumours about his feet, and an inflammation of the abdomen, and a putrefaction of his privy member, that produced worms. Besides which, he had a difficulty of breathing upon him, and could not breathe but when he sat upright, and had a convulsion of all his members, insomuch that the diviners said those diseases were a punishment upon him, for what he had done to the rabbins. Yet did he struggle with his numerous disorders, and still had a desire to live, and hoped for recovery, and considered of several methods of cure. Accordingly he went over Jordan, and made use of those *hot baths at Callirhoe*, which run into the lake Asphaltitis, but are themselves sweet enough to be drunk. And here the physicians thought proper to bathe his whole body in warm oil, by letting it down into a large vessel

* This is a more brief, but more awful description, than the plague of Thucydides or Lucretius.

full of oil; whereupon his eyes failed him, and he came and went as if he were dying. In another part, the same symptoms are described as a *slow fire, which did not so much appear to the touch outwardly,* as it augmented his pains inwardly, for it brought upon him a vehement appetite to eating, which he could not avoid to supply with one sort of food or other. His entrails were also exulcerated.* From this account of Herod's fatal malady, from the pen of an unprofessional author, it is obvious that medicine must have been cultivated as an art in Judæa, and that the Jewish physicians had attained no mean proficiency in the knowledge and treatment of disease. On the supposition that chronic inflammation, or some spasmodic affection, was extant in the colon, or in any other portion of the abdominal viscera, the use of warm bathing appears to have been a judicious mode of treatment in either case. It seems, however, to have terminated in dropsical effusion subsequently, both in the chest and the abdomen, as well as œdema of the lower extremities, and probably a sphacelated state of the scrotum. In another part, Josephus makes mention of the hot baths of Tiberius, and from the following passage, it is probable they were ordinarily resorted to by invalids; "John wrote to me desiring that I would give him leave to come down and make use of the hot baths of Tiberius, for the recovery of the health of his body."

It appears, therefore, clear, from the above testimonies, and from what has been recorded in Holy Writ, that, however little the ancient Hebrews were versed in the study of natural philosophy, and not much accustomed to recur to physical causes, yet that there was nothing in their Scriptures which absolutely forbad them to employ the means which Providence had placed at their disposal, for the alleviation of *ordinary* cases of sickness. In the Jewish theocracy more especially, the plague and the pestilence were the instruments of Divine vengeance, and we know that Miriam, Gehazi, and King Uzziah, were smitten suddenly with leprosy; the first, as a punishment for her detracting discourses; the second, for his avarice; and the third, for his presumption; and the Philistines were smitten with an ignominious disease, for not treating the ark with that respect it deserved. Many other diseases are recorded in Scripture, which were sent by God in the way of punishment. In all such cases, it is needless to say that mere human means were of no avail; to Him whose hand had inflicted the blow, the wisest and most religious had recourse for cure, and King Asa is blamed for placing his sole confidence in physicians, when he had a painful disease in his feet. Instances, too, are not wanting, where disease, and its consequence, were removed by the special interposition of God. Doubtless these awful examples of Divine power, would more immediately impress upon them the futility and insufficiency

* In all these quotations from Josephus, I have copied from Whiston's translation.

of human means, and lead them to a higher source; but it is equally true that they were not instructed to forego the aid of medicine, as may be deduced from a multitude of passages,* where allusion is incidentally made to our art, and to the virtue of herbs in relieving diseases. The Jews, too, believed that evil spirits were permitted to be the executioners of divine vengeance; and in the case of Job, we are told that Satan went forth from the presence of the Lord, and smote Job, with sore boils, from the sole of his foot unto his crown: and so in the case of Saul, it is written that an evil spirit from the Lord troubled him, &c.

With regard to the diseases recorded in the New Testament, they appear to have been principally of two kinds, such as occur under the ordinary dispensations of Providence, and such as were either associated with, or arose from, demoniacal possession, and all these became the subjects of the miraculous power of the Saviour. "They brought unto him, (says St. Matthew,) all sick people that were taken with diverse diseases and torments, and those which were possessed with devils, and those which were lunatic, and those that had the palsy, and he healed them." We find recorded, instantaneous cures of palsy, dropsy, leprosy, and other diseases beyond our art; the bloody issue, which St. Luke says, baffled all human remedies, healed by the touch of the Saviour's garment; the lame and the blind restored at his bidding. These were diseases common to men of every age and nation. There was also another class of diseases associated with demoniacal possession. I am aware how much controversy has been expended on this mysterious subject, but can any one really doubt the testimony of the inspired writers, when they positively inform us that a demon "enters into" a man, and "comes out" of him; when they represent the demons as speaking and reasoning, and hoping and fearing; as having inclinations and aversions peculiar to themselves, and distinct from those of the person who is the subject of the possession? They tell us of one unhappy sufferer who was vexed with many devils; and in the case of the demoniac of Gadara, they assure us that the devils were cast out of the man, and were permitted, at their own request, to enter into a herd of swine, and that immediately the herd ran

* Ezek. xxx. 21. Neither have ye healed that which was sick.

Exod. xxi. 19. He that smote him shall be quit, only he shall pay for the loss of time, and shall *cause him to be thoroughly healed.*

Jerem. xlvi. 11. Go up into Gilead, and take balm, O virgin, daughter of Egypt, in vain shalt *thou use many medicines; for thou shalt not be cured.*

Jer. xxx. 13. There is none to plead thy cause; thou *hast no healing medicines.*

Jer. viii. 22. Is there no balm in Gilead, is there no physician there? why then is not the health of the daughter of my people recovered?

Eccles. iii. 3. A time to kill, and a time to heal.

Hosea, iv. 13. Yet could he not heal you, nor cure you of your wound, &c.

violently down a steep place, and were drowned in the sea. Surely this is a sufficient answer to those who contend that these possessions were nothing more than ordinary diseases.* *Here the disease of the man was clearly transferred from him to the animals in question.* Here we have a whole herd of swine possessed by the evil spirits, that had left the unhappy demoniac. Who ever heard of swine afflicted with madness or epilepsy as a natural disease, in the way here described? St. Luke, himself a physician, speaks of a woman whom Satan had bound for eighteen years; and, in another place, he records the casting out of a dumb spirit, at whose expulsion the dumb spake. And St. Luke records the joy of the seventy, who returned, saying, "Lord, even the devils are subject unto us through thy name." Do not the inspired writers themselves make a distinction between diseases occuring in the ordinary course of nature, and those induced by the instrumentality of evil spirits? Those labouring under diseases, and those possessed by evil spirits, are mentioned as distinct and separate classes; and, in various passages, the power given to the disciples is this, "to cast out unclean spirits, and to heal all manner of sickness, and all manner of disease;"† and in another place, "to have power to heal sicknesses, and to cast out devils."‡ Here are two distinct functions, power over ordinary diseases, and power over demoniacal possession. They are mentioned, indeed, in Scripture, as frequently combined, but not always. It is enough for us to know that, at the time of our Saviour's appearance in the world, such evil spirits were permitted to possess, and in various and dreadful manners to torment, the bodies of men, possibly as one means of displaying the Saviour's power. Nothing can, at the same time, evince more strikingly the beneficent tendency of our religion, than that the miracles that were to fix upon it the seal of divine origin, were chiefly such as at the same time ministered to the relief of human suffering. That the practice of physic, however, was prevalent in Judæa at the time of our Saviour, is evident from the following

* I deem this a sufficient answer to those who assert that it was customary among the Jews to ascribe certain diseases, such as madness and epilepsy, to the agency of evil spirits, and that, upon this notion, the phraseology of the New Testament was built; just as Moses, in his account of the creation, adapts himself to the popular astronomy of the age, instead of giving the true system of the universe. But Moses no where inculcates a *direct error* in this respect; besides, the case of the demoniacal possessions is very different. Surely the remarkable declaration of our Saviour himself to the Pharisees, in the 12th chapter of St. Matthew, might set this matter at rest. "Every kingdom divided against itself," &c. and "if Satan cast out Satan," and seq. Can language be more decided than this?

† I have taken the above from St. Luke, because I considered his testimony on this point, perhaps, more valuable than the other Evangelists; but instances abound in all the four Gospels.

‡ St. Matthew, x. 1.—Mark, iii. 15; i. 32, 34, and passim.

passage, which must be considered as a direct sanction of our art; "and Jesus, answering, said unto them, they that are whole need not a physician, but they that are sick." One of the four evangelists we know was a physician, and it will be admitted, I think, as no small confirmation, if any such were needed, of the truth of the New Testament miracles, that one who records them more fully than the rest, was a physician; and as most of those miracles have a reference to healing the sick, had those cases been otherwise than what they profess to be, had they not been miracles, here was one every way qualified to detect their fallacy. Such evidence, therefore, to their truth, appears to me of unspeakable importance.

As might have been expected, St. Luke is more circumstantial in his narration of those miracles of our Saviour, which relate to the healing art, than the other Evangelists, and there is one indeed recorded by him, that of raising the widow of Nain's son, not to be found in any other part of the four Gospels. Nor does he fail, as often as he has occasion to mention diseases, or their cure, to select such appropriate language, as none but a professional man could have used, and such as marks some previous acquaintance with the Greek writers. The following examples I have extracted as illustrative of this peculiarity of St. Luke.

The term υδρωπικος applied to the man who had the dropsy, and was healed by our Saviour, occurs only in Luke. There is no mention of it in the other Gospels. The part. pass. perf. παραλελυμενος is several times used by St. Luke, when speaking of one afflicted with palsy, whereas the other Evangelists employ the word παραλυτικος, which is never so used by the Greek writers. When Elymas, the sorcerer, was miraculously punished by St. Paul with blindness, St. Luke says επεπεσεν επ' αυτον αχλυς. The word αχλυς is no where else used in the four Gospels, and was probably a medical term, as we find Galen, who wrote after the time of St. Luke, stating that a certain disorder of the eye is called αχλυς, and those that are afflicted with it, δια τινος αχλυος οιονται βλεψιν, "seem to see through a sort of thick mist or fog." The medical term παροξυσμος appears in St. Luke's writings, not in the other Gospels. The expression for surfeiting or excessive drinking, used by St. Luke, is κραιπαλη, which I observe in a passage of Hippocrates now before me.

In speaking of Simon's wife's mother, who was taken with a great fever, (Luke iv. 38,) he uses the term συνεχομενη, in the same sense that the Greek writers do. The same may be said of the term ιασις, for healing, which is not employed by the other Evangelists.

The father of Publius, who was miraculously healed by St. Paul, is described by St. Luke as πυρετοις και δυσεντεριᾳ συνεχομενῳ.

The woman* who had an issue of blood, is described by St.

* And in describing the cure of the same woman, St. Matthew says εσωθη, and St. Mark states, "and straightway the fountain of her blood was dried;"

Mark as one who had suffered many things of many physicians, and had spent all that she had, and was nothing bettered, but rather grew worse. St. Luke describes the same thing, yet when called upon to allude to his own profession, speaks with more reserve, and instead of stating how much she suffered by many physicians and grew worse under their treatment, contents himself with saying that her disease was beyond the reach of any of them to remove; and in this allusion to the expense incurred by the woman, he selects a more suitable term προσαναλωσασα, than is used by St. Mark, who employs the word δαπανησασα, properly applicable only to spending in a riotous and luxurious manner, and so St. Luke uses it in the case of the prodigal son. In various other passages, also, it is easy to trace the same peculiarity and propriety of expression, resulting from the professional bias of the medical Evangelist. When the other Evangelists speak of diseases and cures, they employ such terms as were of ordinary use, but not so St. Luke. His phraseology, in matters relating to healing, savours of his medical education;* and, indeed, his language in general is superior to that of his brother Evangelists, as might be expected from his previous pursuits. He is the only one of the Evangelists who informs us of the manner of Herod's death, viz. that he was smitten by the Almighty for his blasphemy, and was eaten of worms. I the more readily mention this fact, because in the account which Josephus has given us of the fearful end of Herod Agrippa, (which corresponds with that of St. Luke,) he conceals the horrid circumstance of his being eaten by worms, though he expressly mentions this symptom in the last illness of Agrippa's grandfather, Herod the Great, calling it τω αιδοιω σηψις σκωληκας εμποιουσα.† Other peculiarities of St. Luke will occur to the critical student, but those I have already enumerated, are some of the most prominent proofs of the force of early habits and education on the writings of the medical evangelist. There are also many other passages in the Old and New Testament, which might have been introduced in this paper, indirectly, indeed, but decidedly proving the advanced state of many of the arts among the Jews. But the fear of having already encroached too largely on the patience of the reader, prevents me from pursuing this subject, which, however, should be interesting to all, and which will, I trust, hereafter draw that attention, and those talents, to its consideration, that its importance so eminently deserves.

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but the expression of St. Luke is more concise and appropriate, when he says εση η ρυσις. Nor is the description of the epileptic demoniac less accurate; "and, lo, a spirit taketh him, and he suddenly crieth out: and it teareth him that he *foameth* again, and bruising him, hardly departeth from him."—ix. 39.

* Vide Luke, vi. 19; vii. 10; viii. 55. The words ελκος, ελκοομαι, θειον, ηλικια, and many others, might be enumerated, as indicative of this professional bias on the part of St. Luke.

† Antiq. lib. 17, cap. 6.

ARTICLE II.

Observations on Erysipelas, and its treatment.

BY MR. MIDDLEMORE,

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Medical writers have agreed that erysipelas is an inflammatory disease, but have differed as to the seat and nature of that inflammation. Mr. Hunter supposed that it was the common principle of inflammation acting upon a depraved constitution, which produced erysipelas; he remarks that it is often a secondary inflammation snpervening upon a tendency to healthy suppuration; we are to infer from this, that the constitutional disturbance produced by an injury, for the repair of which a healthy inflammation is set up, is so great, as to interfere with and pervert its action, and introduce one of a less salutary character. Erysipelas, then, according to Mr. Hunter, is a specific inflammation, occasioned by a disordered state of the constitution, producing specific action in that part of the body most susceptible of it; still, however, modified in degree, and in its effects, by the amount of disturbance prevalent in the system, the nature of the parts affected, and the irritating cause. In another part of the same author's work, he says that it cannot be merely constitutional, or the parts inflamed would not recover, if its increase in new parts depended on the constitution; he further adds that it gives the idea, that when parts have once gone through this action, they lose the disposition and become healthy. With all proper deference to so high an authority, I cannot accede either to the accuracy of this reasoning, or the data on which it is founded; we find diseases of a constitutional nature exhibiting themselves, in various forms; and after having existed for a certain time, fade, or, as it would seem, wearing themselves out in one spot, and appearing in another, and again appearing in their original site; we find, also, that it is very apt to recur in the same limb, or part of a limb; and, after having quitted one part of the body, it is exceedingly prone to break out in some other situation; we cannot, therefore, admit that it is otherwise than constitutional in many cases, or that when parts have been once affected, they afterwards obtain an exemption from similar attacks; nor can we, at the present day, allow that a cutaneous disease, dependent on the state of the constitution, cannot change its situation; or, in other words, disappear in one part, and break out in another.

That erysipelas is owing to, and influenced by, the state of the general health, the condition of the constitution, is proved by the state of those in whom it takes place, the circumstances under which it occurs, and the effect of remedies, directed to the improvement of the stomach and bowels. To illustrate this

position; a man receives a compound fracture of the leg, and, in the course of a few days, the limb begins to swell and feel painful, in short, a regular attack of erysipelas supervenes, preceded by feverishness, loss of appetite, nausea, and great nervous excitement; the erysipelas is, in fact, clearly attributable to a local injury, which has previously disordered the general health; in this way must we account for those attacks of erysipelas, consequent on wounds or injuries of other kinds, or various chronic indispositions. The following remarkable instance, illustrative of this view of the subject, occurred to me a short time ago; a man of intemperate habits, had a severe attack of bilious erysipelas, which affected the whole of the right arm; he recovered after a period of two months, and, as his health was not in a very good state, he was advised to go into the country, to attend to the state of his bowels, and to be guardedly temperate in his diet; but instead of doing so, he returned to his former residence and habits, which speedily induced another attack of a similar kind, in the same limb; he again recovered, and received the same advice, which he prudently followed, and on his return, was much improved in health, and has had no relapse since, although, for the previous five or six years, he had been subject to them.

Now this case goes far to prove three very important points; first, the dependence of this peculiar kind of inflammation on the state of the constitution; secondly, the susceptibility of parts recently affected to its action; and lastly, that no parallel can be drawn between it and those forms of inflammation called specific; such, for example, as the small-pox, in which, parts once submitted to its action, seem peculiarly averse to it ever afterwards, though, as Mr. Hunter justly observes, we might suppose that the disposition to disease had ceased for a time; still there cannot be a doubt, that this period of exemption is ephemeral in duration, and that parts once affected are specially obnoxious to subsequent attacks, as though reduced to a more favourable state for future innovations.

Definition and Diagnosis of Erysipelas.

Erysipelas may be defined as a diffused, slightly elastic, cutaneous swelling, attended with heat, pain, and a redness which disappears on being pressed, leaving behind, for a time, a white spot corresponding to the surface of pressure; the swelling is generally bright and shining, and but slightly elevated, and is occasionally accompanied by vesications; unlike phlegmon, it has no obviously circumscribed fulness or distinctly elevated point, although the place or line at which it terminates, is very clearly marked by its colour and hardness; the pain is likewise less acute, and there is less sense of throbbing; it rarely terminates in the formation of matter, which is then imperfect in its qualities, and not contained in one simple cavity. Notwithstanding these important distinctions, it possesses some analogy to phlegmon, in its origin, occasional accompanying symptoms,

and termination; like phlegmon it may be produced by local injury, and may terminate in suppuration; the pulse sometimes assumes the phlegmonoid character, and blood, when abstracted, exhibits the same appearances. According to Bateman, the swelling and vesication clearly distinguish it from erythema, but there are many cases in which neither the one nor the other are present to any perceptible extent; in such cases, the history of the malady, the attendant symptoms, or some connecting circumstances, will be our only guide. Dr. Good adds another diagnostic sign between erythema and erysipelas, namely, the contagious property of the latter; but we are, as yet, in want of evidence to prove what he takes for granted. The best mode of distinguishing these two diseases, is by considering that erythema arises spontaneously, generally occupies a great portion of the surface of the body, comes on suddenly, disappears as rapidly, is attended with scarcely any swelling, and does not affect the constitution in the same degree as erysipelas would, if occupying an equal extent of surface. It has been said by many that erysipelas is contagious, but I confess myself at a loss to discover how any individual, who has investigated the nature of this disease, interested himself in ascertaining its causes, and in discovering the circumstances under which it commonly takes place, should have arrived at so curious a conclusion.

I have frequently seen six or seven patients in a hospital ward, affected, one after the other, with erysipelas, or, indeed, all at the same time; and the surgeon under whose care they were, has been fearful of moving them into other wards; he has shut the poor wretches up together, and thus taken from them almost every chance of recovery, lest they should contaminate others. It has been no uncommon thing to find the same disease break out in other parts of the hospital; the contagionist has then wondered what could have occasioned it, and has been searching for a cause in infectious linen, sponges, or poultice rags. The first thing that led me to suspect the non-contagious nature of erysipelas, was its varied appearance, according to the state of health, or constitutional peculiarities of the patients in whom it took place; I therefore thought that, if those circumstances were capable of modifying, they might also be capable of producing it; reasoning further upon its causes, or rather upon the condition of those in whom it occurred, I felt convinced that any inferences drawn from hospital patients upon this particular part of the subject, must be quite unworthy of notice, inasmuch as most of the causes of this disease were always present with them; besides, I found that it took place very irregularly, attacking sometimes a patient in one wing of a hospital, and another in the opposite one; at least, there was no regularity in this respect; it did not, by any means, invariably attack those nearest its influence; I found, also, that seclusion did not prevent, nor exposure commonly produce it; nor would inoculation produce it, unless the party inoculated was in a bad state of health, and then it seemed to

occur as a consequence of severe irritation, just as though any putrid matter had been applied in the same way. I could not discover that it was communicated in private families, where the inhabitants were generally healthy, the situation open and dry, and the rooms perfectly clean and well aired. If, then, it requires for its production, a disordered state of health, imperfect ventilation, &c. I could readily assign a cause for its prevalence in hospitals, where many persons are assembled together in a comparatively small space, whose spirits are depressed and whose bodies are diseased; and where the atmosphere they breathe is contaminated by various obnoxious impregnations; without having recourse to contagion; again, many of the contagionists talked of its especial prevalence at certain periods, without seeming to regard atmospheric influence, or reflecting that the same condition of atmosphere, occasioning or disposing to a particular disease in one party, might also produce it in another; this loose kind of reasoning, perhaps, more than any thing else, caused me to examine the matter more particularly for myself, for I could not help viewing with suspicion, opinions promulgated by men who had taken so partial, contracted, and illogical, a view of the subject.

With regard to the seat of erysipelas, I have stated that there has existed a great variety of opinions, but it would be lengthening this paper beyond its allotted bounds, to investigate the causes of this difference; I shall therefore briefly mention the results of my own limited observation. As a general remark, I would say that the skin is its proper sphere of action; there it commences, and to that it is often confined, spreading, however, in its progress, according to its degree and duration, to the subjacent cellular membrane, and occasionally implicating other structures. In that form of the disease described by Mr. Hutchinson, the muscular aponeuroses and tendinous sheaths were the parts chiefly and primarily affected; and, according to the same author, this frequently happens; an assertion which, if proved, would decidedly negative the average result of observation. But there is one fact (amongst many others,) which militates strongly against Mr. Hutchinson's opinion; I allude to the redness of the skin, as one of the primitive symptoms, and the disappearance of that redness on pressure. If, as Mr. Hutchinson supposes, the deep seated parts were chiefly and primarily inflamed, how could slight pressure influence their circulation, and produce that pallor which is seen immediately after the removal of the compressing force? Indeed, superficial redness, instead of being one of the earliest, ought to be one of the latest symptoms, if Mr. H.'s theory were valid; for, as it is not presumable that the enlarged vessels of the cellular membrane and fasciæ would be seen through the skin, the redness could only be observed when it had partaken, from the circumstance of its proximity, in the inflammatory condition of other parts; and when the structures beneath it were suffering from the effects, as

much as the existence, of inflammatory action: it is needless for me to say that the reverse is correct, the redness of the surface, heat and pain, having almost always a coeval existence. In slight cases, where I have had an opportunity of examining them, I have commonly found the mischief confined to the skin; it has been more vascular, and firmer than usual. In moderately severe and procrastinated cases, I have usually found the cellular membrane intervening between the integument and muscles, considerably thickened, and condensed into laminæ of a brawny or cartilaginous firmness, with a quantity of thin, imperfectly formed, pus deposited in its cellular-laminous structure: this is the chief cause of the swelling, and satisfactorily accounts for the thickening which remains so long after recovery; at the same time, the fascia is unaltered on that side towards the muscles, which are quite unconnected with the mischief; there can be no doubt, therefore, that the loose cellular structure of the adipose substance, does participate in the inflammatory action, although it has been represented as having no share in the disease. In the worst cases, we generally find a mass of sloughy cellular membrane and fasciæ, mixed with thin fœtid discharge, lodging upon the muscles, which, together with the skin, are becoming, or are already in a state of gangrene, the patient being destroyed by irritative or typhoid fever.

Causes of Erysipelas.

Erysipelas commonly arises from external violence, it however frequently occurs spontaneously, especially at certain seasons, and in particular situations, often taking place around old ulcers; it requires for its production, a bad state of health, a vitiated constitution, or some especial or unequivocal disorder of the digestive organs; indeed it seldom, if ever, attacks the robust and healthy. The following case fully exemplifies my observations:

A patient had a severe attack of phlegmonous erysipelas; he stated that, a week preceding, a bar of iron had fallen upon his arm, which was not followed by any painful effects until the next day, when he perceived a slight swelling; he was, at the same time, hot, thirsty, and restless; on the succeeding day, a blush of redness appeared, which quickly extended up the arm; the pain, heat, and tumefaction, increased, till he was compelled to solicit assistance. I enquired if he had ever had any thing of the kind before; he distinctly stated that three years prior to the occurrence of the present accident, he had a similar one; that an abscess quickly formed, which was opened, and a large quantity of matter discharged; the wound soon got well; on being further questioned, he added that, at the time of the first accident, he was in prosperous circumstances, temperate in his habits, and in a good state of health; that lately, domestic calamities had induced the very reverse of this state, and that his health declined, and his habits of living became worse up to the present time; the latter part of his statement was corroborated by a pallid coun-

tenance, furred tongue, and languid pulse. It is not necessary to enter further into the details of this case; it is sufficient to prove, first, the agency of mental disquiet, in producing that condition of health favourable to the occurrence of erysipelas; and secondly, the modification of local disease by the state of the constitution. Erysipelas is often very sudden in its attack, and is usually preceded by symptoms similar to those which indicate the approach of fever; the patient becomes anxious and restless; the skin hot and dry; and the tongue uncommonly furred, oftentimes with a bright lively red margin; the redness and swelling commence, and the preliminary symptoms become aggravated, to an extent varying in degree in different cases, but generally concomitant with the variety and intensity of the local affection.

Dr. Thomson, speaking of cutaneous inflammation, says that the pain is hot, sharp and pricking, and the swelling slight, depending, in a great measure, on the tumefaction of the subjacent cellular tissue. I confess myself rather at a loss to discover what the learned author means by hot pain, having always considered heat and pain as distinct phenomena of inflammation; if, however, it is meant to imply that cutaneous inflammation is attended with a greater degree of general heat than that in other parts, I believe it is incorrect; that a part of the swelling depends on the altered state of the cellular membrane, is too evident to admit of a doubt; effusion into its cells, either of a serous or purulent discharge, is an almost invariable accompaniment of erysipelas. We cannot imagine that so compact a structure as the skin, will itself admit of much distension, however excessively inflamed. Mr. Abernethy divides erysipelas into the idiopathic and symptomatic, or, as they are commonly called, the medical and surgical erysipelas, and embodies nearly the whole of his observations upon the subject, in the relation of a case, which is chiefly remarkable for the state of the individual's health in whom it occurred; the removal of that state by remedies directed to the digestive organs; the quick subsidence of the erysipelas on their return to a healthy state: and the large collection of matter which followed the cure of the inflammation. This last occurrence I have never heard satisfactorily explained; it may, perhaps, be the result of the previous inflammation, which had concentrated or drained its effects into one part. I have frequently noticed these collections, and in a patient with severe erysipelas of the leg, I discharged, by a small opening in the ham, more than half a pint of reddish pus, just after the violence of the erysipelatous inflammation was subdued; I could not suppose that this was the effect of common phlegmonous inflammation, although the matter was so readily discharged by one small aperture; first, because he did not complain of any particular pain in that situation; secondly, because the matter was not such as usually results from that kind of inflammation; and lastly, because these two kinds of inflammation cannot be supposed to go on at the same time.

Having talked of the modification of erysipelas, from constitutional and other causes, it is perhaps right that I should further explain myself upon this point. If a patient, (say a dram drinker,) whose liver is diseased, and whose digestives are thereby disordered, receive a bruise upon his arm which is succeeded by erysipelas, it will be tinctured and modified by what may be called a bilious diathesis, and will be most speedily recovered by measures directed chiefly to the morbid viscus; again, say erysipelas arises in the œdematous leg of an emaciated subject, into the cellular membrane of which a puncture has been made, it will be characterized by distinct symptoms, history, and termination, and will be most effectually cured by stimulating the system generally, and removing the anasarca of the limb. On this account, I deem it right to divide erysipelas into the four following varieties.

Phlegmonous Erysipelas.

This kind of erysipelas more nearly approaches healthy inflammation than any of its other forms, and is generally the consequence of a bruise or some external violence; when fully formed, it is generally of a dark red colour; there is considerable swelling, heat, and tension, and a slight sense of throbbing; vesications usually arise, and the cuticle becomes elevated by an acrid serous effusion; they, however, rarely occur prior to the fourth or fifth day, or remain longer than the sixth or seventh; the surrounding parts are frequently irritated, and even excoriated by their discharge, and in severe cases, they degenerate into sphacelated spots; the swelling is commonly smoother and more elastic than in any other form of the disease; if pressure be made upon it with the fingers, great resistance is experienced, and the part resumes its pristine form and colour the moment the pressure is withdrawn; there is also increased arterial action; the pulse is full and frequent, and sometimes hard; the skin hot and dry; symptoms of delirium supervene, and if not meliorated, proceed to an alarming and even fatal extent. If, in this state, the fingers be applied to the inflamed part at a distance from each other, and alternate pressure be made, an indistinct sense of fluctuation will be experienced; if the inflammation continues to spread, and does not yield to remedies, the parts assume a livid colour, the pulse becomes small and frequent, and the patient quickly sinks or degenerates into a typhoid state; this is more likely to happen when the head and face (the most common seat of this kind of erysipelas,) are the parts affected. In these cases, examination after death generally discovers effusion between the membranes, or within the ventricles of the brain; and the cutis, subcutaneous cellular tissue, and aponeurotic coverings of the muscles in a sloughy state. This form of erysipelas may be distinguished from every other, by its greater tension and elasticity; by the throbbing pain, more nearly resembling that of phlegmon; by the sense of fluctuation; the fulness and

hardness of the pulse, and other accompanying symptoms of excitement. The vesications, also, are large and very abundant; and it may be remarked that those cases in which they are very numerous, terminate most favourably, and with least destruction of skin, cellular membrane, &c. It is likewise less tedious in its duration than the other varieties, and less prone to relapse and change its situation; it sometimes suddenly disappears after eight or nine days' continuance, leaving the skin of a furfuraceous roughness, the cuticle commonly pealing off afterwards; at other times, when the symptoms have been very severe, and long continued, it ends in suppuration, but never in that healthy formed pus which is found in a common phlegmonous abscess; the matter is contained in sacculi, or diffused between the laminæ of the cellular membrane; is mixed with a thin acrid fluid, and sloughy cellular tissue, and cannot be evacuated by an opening at any one point, but requires several free incisions even for its partial discharge.

Bilious Erysipelas.

The bilious erysipelas differs from the foregoing, in possessing less swelling, a brighter red colour, and a more transparent surface; vesicles rarely make their appearance, and when they do appear, are smaller than in the preceding case; the heat and tension are comparatively trifling, and there is a sense of pricking or smarting, rather than of acute or throbbing pain; if the fingers be applied to the inflamed part, no fluctuation is observable; the inflammatory symptoms are likewise very slight, indeed, the pulse is often small and soft, and the skin, though rather increased in temperature, preserves its perspirability; there is, however, evident hepatic disorder, as indicated by the patient's appearance; constant nausea; want of appetite; bilious vomiting; pain about the scapulæ, &c. This disorder of the liver and (sympathetically) of the alimentary canal, I presume to be its common cause, and there is ample foundation for such a supposition, for if the treatment be, as it ought, directed chiefly to the regulation of this viscus, the symptoms will be found to subside, as the remedies successfully act in restoring it to its healthy condition. In procrastinated cases, where the disease is extensive, typhoid symptoms supervene and destroy the patient.

This kind of erysipelas is commonly an idiopathic disease, and occurs in those of intemperate habits, whose viscera are in a most unfavourable state to allow of a cure; men seem much more liable to it than women, and it is one of its prominent characteristics to recur many times in the same patient, particularly if the slightest irregularity in diet, &c. be indulged in. It ought to be mentioned that it does not often terminate fatally, if timely and properly treated; when it does, it may generally be referred to that continued irritation which a wasted and enervated constitution is ill calculated to resist. Post-mortem examinations have always confirmed the truth of a position, which, if only in

reference to treatment, it is necessary to establish. I am thoroughly convinced of the existence of this variety of erysipelas, the peculiarities of which may be referred to a disturbed action, or diseased condition of the liver; I know of none more distinct in its characters, and decided in its symptoms, and believe none has a clearer title to separate description and treatment.

Œdematous Erysipelas.

The œdematous erysipelas is characterized by the slowness with which it makes its decided appearance, and the mildness of its early symptoms; by its pale colour, and want of tension and elasticity; it is generally much diffused, and frequently exists in patches or broad lines, giving to the skin a streaked or blotched appearance; if the fingers be pressed upon it, it does not quickly resume its original form and redness, but remains for a time pale and indented; when vesications appear, they are small, and by no means abundant; to these symptoms must be added the smallness, frequency, and generally irregularity of the pulse, and extreme prostration of strength. It has likewise a strong propensity to spread, and a remarkable disposition to recur, when once it has made its lingering exit. I have known a patient suffer from five or six attacks, a fresh inflammation arising just as the former one had disappeared. The œdematous erysipelas most frequently attacks those who have a dropsical tendency, or who are afflicted with dropsical swellings; it is altogether confined to the weak, aged, and infirm; and, according to my own observation, women are more especially liable to it; it not unfrequently follows punctures made into the cellular membrane of the legs, for the purpose of removing an extreme degree of anasarca, a circumstance by no means surprising, when we take into consideration the state of health of the individuals thus punctured, the depending situation of the wound, and the irritation to which it is constantly subject, from the dribbling of the fluid to which it was intended to give exit. I have rarely seen it prove fatal, except when it has attacked the head and face; the sensorium is then very much disturbed, and displays that disturbance in a low muttering delirium, but never proceeds to that convulsive violence which now and then comes on in the course of the phlegmonous form of this disease. A celebrated writer states that it is generally attended with considerable danger, and often proves fatal in the course of five or six days; it has not fallen to my lot to notice this event, by any means so frequently as this author would lead his readers to expect; a tedious convalescence is in my opinion much more common. It is sometimes observable, that the redness does not occupy so large a surface as the swelling, which is owing to the extent of œdema being greater than that of inflammation; this, however, must be regarded as an exception, the redness and swelling occupying generally an equal extent of surface; the œdema, indeed, is here a product of inflammatory action, so slight, from the circumstances already pointed out,

that instead of that firm deposit, mixed with purulent and other secretions, which takes place in the phlegmonous erysipelas, producing the resistance and fluctuation previously described, we have merely a serous effusion, a condition of œdema, the result of inflammation of the lowest and feeblest character. It is this form of erysipelas to which the term erraticum more particularly applies; its migratory disposition is not unfrequently evidenced, by its attacking almost every part of the body in succession, often passing suddenly from one side of the body to the opposite one. Patients rarely die from this disease alone; it commonly supervenes upon some more fatal affection, the destructive tendency of which, however, it greatly augments; effusion into some of the important cavities is generally found, on a post mortem examination of those who die under such circumstances.

Gangrenous Erysipelas.

The last, and by far the most fatal, though fortunately uncommon, variety of erysipelas, is the gangrenous. This disease is usually preceded by violent cerebral disturbance, and is generally sudden in its attack, which differs only from that of the œdematous in its greater rapidity; the swelling quickly puts on a dark livid appearance, and assumes a most unhealthy character, but is not attended with any extreme heat or pain; if the part be pressed, it does not immediately rise on the removal of the compression, and feels unusually soft, uneven, and flaccid; if it bursts, it discharges a thin ichorous matter, and the interior of the wound exhibits a thoroughly gangrenous aspect; the pulse is, at the same time, small, quick, and irregular; the tongue foul, and covered with a dark sordes, and the same state of system is present as that found in typhoid fever; it is not unusual for phlyctenæ, with a livid base, to appear at its commencement. When this disease terminates favourably, (a rare occurrence,) sinuous ulcers remain for some time afterwards, discharging an ill-conditioned pus, the skin and cellular membrane gradually sloughing, and detaching themselves from the living parts. On examination of those who die, the part immediately affected exhibits a sphacelated appearance; skin, cellular tissue, muscular aponeuroses, and even the muscles themselves, are implicated, and form one putrid mass; extensive effusions are found in the ventricles, or between the membranes of the brain, which are commonly much increased in vascularity. The individuals most exposed to its attacks, are those of a weak nervous habit, of easy excitability, but not possessing sufficient constitutional power to support continued excitement; and those whose health has been reduced by previous indisposition. I wish the following points to be especially borne in mind, in connection with the treatment of this disease, namely, the depression of the vital powers; the gangrenous tendency of the malady; and the destructive rapidity of its power.

Treatment of Erysipelas.

There is no doubt but that one cause of its frequent inveteracy and fatality formerly, was owing to a practice directed only to the local malady; if, instead of endeavouring to remedy merely what was, they had extended their views further, and have considered what might be; if, instead of viewing only the local mischief, they had taken into consideration the state of constitution which had allowed or produced it, there is not a question but that its fatal termination would have been much less frequent. The absurd attempts to remedy all local diseases merely as such, are comparatively seldom made; but still there are some practitioners who, either from a perverse inclination to differ from their brethren, or an obstinate and cherished fondness for error or ancient opinions, indicate by their practice an attachment to such antiquated notions. I have often heard medical men earnestly disputing about the best applications to erysipelatous surfaces, as though they were all-important; or, as if the same application had the power of universal adaptation, whilst they have been little concerned about any other remedy. I have seen some of these men pertinaciously insist on the superior advantages of oatmeal or flour, and perseveringly employ it, in despite of reason and the patient's remonstrances; if the face has been the morbid part, it has been thickly dusted with the powder, leaving apertures for the eyes, mouth, and outlets of the nostrils; when the vesications (which are commonly present,) have burst, their contents have formed a paste with the meal, which has been moulded to the countenance, and rapidly dried by the heat of its surface, till it has become as hard as pasteboard, and in this way taken a cast of the features. However numerous may be the advocates of this practice, I cannot be induced to believe that the use of such an oatmeal mask can be otherwise than highly injurious, and excessively irritating to an erysipelatous surface. In the course of my observations on the treatment of erysipelas, I shall have occasion to recommend incisions, not merely for the discharge of sub-cutaneous effusion, but also to relieve the tense and inflamed condition of the skin; now, although the number and length of these incisions must vary, according to the situation, extent, and style of the disease, I could wish to limit them, under all circumstances, to a reasonable number and longitude. It is a curious fact that punctures, short incisions, long incisions, and (as I have heard them called,) even slashes, have been strenuously insisted upon by the advocates of each plan; each party seeming chiefly anxious to contend for a particular longitude of cut. If a limb, throughout its entire length and circumference, be involved in erysipelatous inflammation of the phlegmonoid character, it would be desirable to make three, or at most, four, incisions quite down to the fascia, varying according to its size, from three to six inches in length, which would relieve the tension of the skin as effectually as though twice the number were

made, and, at the same time, be productive of much less pain; but, if the inflammation be somewhat advanced, the tension diminished, and effusion perceptible, a greater number of shorter incisions would be required, to discharge, at many points, those collections and sloughs which could not be discharged by a few. I have never thought it advisable to carry an incision from the groin to the knee, or from the knee to the ankle, at one continued sweep of the knife; but have, on several occasions, made a moderately long one on opposite sides of the limb; two short incisions, one at the upper, another at the lower part, have, I think, relieved the tension more perfectly than a continuous one; however, those who have had the most ample opportunity of employing them, urgently insist upon the propriety of one continuous cut from groin to knee, or knee to ankle, according to the seat of the inflammation.*

* Mr. Higginbottom has so strongly recommended the application of the nitrate of silver, as a remedy for erysipelas, that I felt it to be my duty not only to employ it myself, but to solicit the opinion of my friends (who had given it more extensive trials), respecting its nature. Although I altogether disapprove of that principle that would restrict the treatment of a constitutional disease to any outward application, and am convinced of the necessity of altering that dangerous condition of health which allowed or produced the local disease, of which it (erysipelas) was a mere evidence; and although I am convinced in my own mind, that in these cases, the spontaneous occurrence of inflammation of the skin is a salutary relief to that condition of health which admits it; and should be reluctant even to prevent its extension by any local measures, without, at the same time, employing some constitutional plan of treatment, from an impression that a state of health so disordered, would, when foiled in its attempts to relieve itself in one way, display its disturbed condition in a more dangerous and destructive form. I have yet employed Mr. Higginbottom's plan to its full extent in two instances; I must, however, confess myself so little satisfied with the result of my trials, that I certainly should not repeat them again to an equal extent on any future occasion; or to state my opinion more definitively, if called to a patient with phlegmonous erysipelas of the whole head and face, I should be unwilling to use the lunar caustic over the entire surface, to the exclusion of what I believe to be more promptly efficient remedies. I object to Mr. Higginbottom's plan, because it excludes important remedies, and advocates the absurd principle of curing by local remedies a constitutional disease, and thereby substitutes for correct and scientific views, mechanical and narrow notions of disease. Mr. Higginbottom appears to think he can cure this malady by the unassisted employment of the nitrate of silver, or, what is the same, by some application directed solely to the inflamed part, which I have hitherto been taught to believe is, in the great majority of instances, totally impossible; he further represents the success of his remedy, after the disease has failed to be arrested by active constitutional means. I do not understand, from his book, how he contrives to be so successful; most of the severe cases of phlegmonous erysipelas I have seen unarrested, after every active constitutional means of cure have been employed, have already

From what has been already said, I presume, it will be evident that the same plan of treatment cannot be suited to every form of the disease; the various causes from which it arises, the numerous appearances it assumes, and the different symptoms by which it is attended, sufficiently indicate the necessity of a varied treatment; to state any fixed or specific plan, as applying to all, would be altogether absurd; like every other plan of treatment, it must be determined by circumstances. Agreeably with this view, I shall apply to each variety a distinct mode of treatment, arranging my remedies under two heads; the first, including all general means, usually called the constitutional treatment; under the second, I shall mention merely topical applications, or such as are intended, by their local application, to sooth pain and irritation.

Treatment of Phlegmonous Erysipelas.

The first obvious indication in the treatment of phlegmonous erysipelas, is to lessen inflammatory action; secondly, to restore the cutaneous secretion, and equalize its circulation; and lastly, to allay pain and irritation. If, at the onset, there be a full, hard pulse, with considerable heat of skin, and a thickly furred tongue, there can be no doubt about the propriety of blood-letting, its extent being regulated by the age and habits of the patient, and the violence of the symptoms; if the erysipelas be seated about the head, topical bleeding, with leeches, will be proper; or blood may be abstracted from the jugular vein instead of the arm; the bowels should be opened by calomel and jalap, and saline purgatives, and the diet should be lowered. If there is much tension and pain, one or two free incisions should be made into the most prominent parts of the swelling; after the skin has been divided, its edges will retract, and the following advantages may be expected; a diminution of pain, a limitation to the spreading of the inflammation, a free discharge of what would otherwise accumulate and produce increased mischief, and a lessening of the inflammation by the abstraction of blood immediately from the inflamed surface; they are more especially necessary when there is reason to suspect the collection of matter or other fluid; we should not, however, wait for the formation of matter, but rather anticipate or prevent its formation, by an early use of the knife; it is no objection to this plan of treatment, that the patient may be enfeebled by the consequent loss of blood; for, the hæmorrhage resulting from these incisions, is chiefly from the vessels of the inflamed part; the vessels engaged in feeding the disease, and their partial collapse being in a great measure permanent, can scarcely at all affect the general mass of the circulating fluid.

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produced deposition of some kind or other; and, I presume, Mr. H. does not mean to declare, that a serous or purulent effusion beneath the skin, or that thickened condition of the cellular membrane so commonly met with, can be removed by this remedy.

Our next object should be to restore the skin to its natural state and action; for this purpose, salines, with antimony, or Dover's powder, are, perhaps, the best medicines; the bleeding alone will sometimes effect it, but it must be remembered that there are many cases in which we cannot bleed. A drachm of bark given every one, two, or three hours, has been very vaguely recommended by a writer upon this subject; but his advice can only apply to the latter stages of the disease, when the vital powers begin to sink under the continued irritation, or the profuseness of the discharge; there, certainly, it is right to stimulate, but some discrimination and judgment is required in the selection of the proper period; by commencing too soon, we are likely to aggravate all the symptoms beyond the hope of alleviation; on the other hand, by delaying too long, we permit that state of debility to come on, from which the patient seldom rallies; the time when stimulus is called for, appears to be when the pulse, from being full and hard, becomes small and frequent; when suppuration has commenced, and the dark florid redness is interspersed with yellow patches, and when the inflammatory fever begins to assume the typhoid type; and it may be here remarked, that whatever may be the value of brandy or wine as a stimulus, it cannot claim higher merit (in these cases at least), than ammonia; a mixture of camphor with aromatic confection and ammonia, is, for the present purpose, one of the most useful medicinal formula with which I am acquainted; but it should be given in small, frequently repeated doses, certainly not allowing a longer interval than two hours to elapse between the administration of each dose, so that the excitement of one quantity shall not have entirely subsided on the administration of another. Bark should not be given, if quinine can be procured, on account of its propensity to accumulate in the intestines. But it is by no means probable that this kind of erysipelas will require such a mode of treatment; it can only happen when suppuration or sloughing has proceeded to a great extent, or the disease has taken an unusual and unfavourable course. In ordinary cases, the violence of the inflammation declines in the space of five or six days, and then a generous diet, attention to the bowels, country air, and moderate exercise, will be sufficient to complete the cure. In every tedious case, the diet should be light, though nutritious, and a free current of air should be allowed to circulate through the invalid's apartment.

The local treatment simply consists in the employment of cold or tepid water, or poultices, as may best suit the patient's feelings; this should always be attended to, and however strongly the average of practice may convince us of the general superiority of the one over the other, we must not pertinaciously adhere to it, as proper for every patient, but allow their feelings to be the sole guide; as the obvious intention of such applications is to sooth pain, it would be very absurd to continue a cold one which created uneasiness, however much it might appear to be called

for, by excessive heat or other symptoms, to the exclusion of a tepid one which afforded relief. Cold applications are generally most suitable where there is much local heat, and great general excitement, but the rule is, of course, with regard to all the outward applications, *that* is most serviceable, which is most comforting to the patient's feelings. Authors have said much about astringent, rubefacient, unctuous, and earthy applications, and Mr. Pearson has particularly recommended warm cataplasms, composed of various soothing powders; but there is every reason to believe that a common poultice affords quite as much benefit, without aniseed, fennel, &c. as with them. When the vesications burst and excoriate the surrounding skin, the use of warm milk and water is probably as good an application as any. In some few instances, I have applied blisters upon the sound skin, about the eighth of an inch anterior to the inflamed margin, with the intention of preventing the extension of inflammatory action; judging from my limited experience, their advantages are not such as to entitle them to general adoption.

Treatment of Bilious Erysipelas.

I have already stated that the bilious erysipelas is characterized by an evident disorder of the hepatic system; I have mentioned its distinguishing appearance and symptoms, and endeavoured to show that it is clearly distinct from every other variety of the disease; but I do not mean to say that any of its other forms may not be connected with a disordered state of the liver; on the contrary, I know they sometimes are. The form of erysipelas I have described as the bilious, assumes, in almost every case, the same appearances; is accompanied by the same symptoms, and requires the same general treatment. Our first object should be to attend to the hepatic function; my observations upon this subject, incline me to rely, for this purpose, in a great measure, upon antimony, particularly at the early stages of the disease. Two or three emetics, in the course of the first forty-eight hours, are attended with the happiest effects; these should be succeeded by saline purgatives, so as thoroughly to clean the bowels, which then should be kept moderately open by repeated doses of the same medicine; even allowing we cannot, from some cause or other, administer emetics, constant nausea, by repeated doses of tartarized antimony, should be induced. We should next act upon the skin, by means either of antimony or Dover's powder, combining with each dose a small quantity of calomel; warm diluting beverages will materially aid their operation, and ought to be freely taken; gentle action upon the skin is highly important, and should in no case be neglected; we always find the symptoms meliorated after sweating, and those cases most frequently terminate successfully, in which we are able to produce it at an early period. Our last object is to sooth local pain, as, in the foregoing case, fomentations and poultices, varying in their nature according to the feeling of the patient, constitute our chief re-

source; some practitioners prefer goulard water, others spirituous applications, or tepid water; but providing pain is relieved, which may often be done by any one of them, it is unimportant which is selected; sometimes the uneasiness, and even the extension of the inflammation, may be checked by a free incision through the integuments; if the pain and tension be great, this is clearly called for, and it is truly surprising to observe the instantaneous benefit which is afforded by this practice; certainly it is not required so often as in the preceding variety, and then only to a less extent, as the mischief is more superficial, less inflammatory, and the formation and burrowing of matter so common in the former, but rarely occur in this; this, however, is but ministering to local symptoms, to which, of course, our practice must not be limited. As a general remark, I may say, that soon after incisions have been made, a mild poultice should be applied over a portion of lint, placed immediately over the divided parts, to prevent that irritation which the particles of the poultice would otherwise occasion; as the inflammation disappears, a moistened roller, or soft bandage, should be carefully applied over the part in which the incisions have been made, to bring, as nearly as possible, the gaping edges into contact, so as to diminish the magnitude of the wounds, and, by its pressure, to lessen the thickening which always follows chronic inflammation of cellular membrane.

Treatment of Œdematous Erysipelas.

In speaking of the œdematous erysipelas at a former part of the present paper, I mentioned the debility of those in whom it chiefly occurred, and its disposition to spread and suddenly change its situation; these circumstances will point out indications of cure. As there is never any general inflammatory tendency, venesection is never admissible; when I say never, the remark is not meant, of course, to apply to anomalous cases, but merely those in which symptoms such as have been stated, are alone present; from the state of the pulse and other symptoms, the contrary to bleeding is demanded, and we ought to commence our treatment by the use of gently stimulating remedies; it is always right to keep the bowels moderately open, and the saline aperients seem best calculated for this purpose; we should next attend to the state of the skin, and the diaphoretics before mentioned may be selected; or, as circumstances may vary, we may use instead, the citrate of potash, or acetate of ammonia; in no form of erysipelas is this more necessary, determinations to particular organs, and its recurrence may sometimes be prevented by an attention to this one point. It is of importance to relieve the pain and irritation which are often present; anodynes, and various anti-spasmodics, have been recommended for this purpose, but I have found opium more useful than any other medicine, and I am not aware of any essential objection to its use. It is sometimes found necessary to abstract blood topically for the relief of

local determinations, but this should be most cautiously ventured upon, for in some instances a fatal metastasis has been caused by this and similar preventive means; when the head is much affected, a blister between the shoulders may be of service, by producing and retaining irritation at the external parts, at a distance from one so important as the brain; when the thighs and nates are affected, the inflammation sometimes extends up the rectum; this is almost certainly fatal, and nothing with which I am acquainted will check its progress, the same general means can only be more actively resorted to, and the bowels should be assiduously cleared by the mildest laxatives. The inflamed part may be relieved by the applications previously mentioned, and should it occur in an anasarcous limb after incision, the part over which the fluid dribbles should be carefully anointed with some mild unguent, so as to prevent its being irritated by the discharge.

Treatment of Gangrenous Erysipelas.

The first important object of attention in the treatment of gangrenous erysipelas, is to prevent its extension; and secondly, to restore the perfect vitality of the injured parts, and prevent them from degenerating into a sphacelated state; thirdly, we must attend to the state of the secretions; and lastly, employ such local applications as may seem best adapted to the particular state or stage of the disease. To effect the first, namely, prevent the extension of the mischief, tonics and stimuli should be freely given; bark, which has often been indiscriminately employed, is here undoubtedly serviceable; a drachm of the powder every two hours, or, what is better, two or three grains of quinine, with occasional doses of wine, may be administered; the feebleness and languor of the system so invariably present, is by these means partially removed: we have next to restore the part to its perfect vitality, and the means already employed to fulfil the former indication, are likewise adapted to this; we may add local stimuli, suited to the strength of effect we wish to produce, with an intention of inducing an equable circulation. Our next object is to induce gentle action upon the bowels; every harsh and irritating purgative, must, of course, be prejudicial, and therefore none but the mildest laxatives should be employed; diaphoretics form useful auxiliaries whenever the skin is deficient in its accustomed secretion. As local applications, warm fomentations of milk and water, or simple cataplasms, answer every purpose; in the more advanced stages, where the parts approach to a state of sphacelus, carrot, or fermenting poultices, or a lotion containing the chlorate of lime, by correcting fetor, may be preferable. It is a question whether or not incisions are likely to be serviceable; I have no doubt about their utility in almost every stage; they allow a free discharge to offensive matter and sloughs, and permit the more decided application of stimulating remedies, if it be thought necessary to use them. The subse-

quent stage will require the same treatment as mortification from deficient action. I have as yet said nothing of diet; and upon this subject I would just observe, that it should be as large in quantity and invigorating in quality as the digestive organs are capable of converting into use.

ARTICLE III.

Cases of a peculiar species of PARALYSIS.

BY JOHN DARWALL, M. D.,

Physician to the Birmingham Dispensary.

THERE is a species of paralysis frequently attacking the superior extremities, which I do not remember to have been particularly noticed, and which, nevertheless, if I may judge from my own experience, is by no means of unfrequent occurrence. Of the actual cause of this affection, as of the proper means of treatment, I can, I fear, add little; and I shall confine myself, therefore, to a relation of cases, pointing out between each the relation they appear to bear to each other.

The first case which occurred to me was in a washerwoman, who had been accustomed to carry heavy weights upon her arms. The paralysis was confined, at first, to the muscles which raise the os humeri; there was also great emaciation of the deltoid muscle; and she could only move the limb a few inches from the trunk, and this with great difficulty. Nevertheless, she could bend the fore arm upon the arm, and, to use her own expression, she could do any thing under the elbow. The hand had also its full power. There was not the slightest symptom of affection of the head, nor, indeed, excepting this paralysis, did the patient appear to have the slightest ailment. The treatment instituted did no good, and she gradually lost the whole power of the upper extremities; after which time I lost sight of her, and have since heard nothing of the case.

About the same time, another instance presented itself, in a man who was in a cornfactor's warehouse, and was much accustomed to move large bags of oats, beans, etc. Like the former case, his incapacity was at first confined to the muscles which raise the arm, but gradually involved the whole limb, till, at the present time, seven or eight years from the original attack, he has no use whatever in the superior extremities. In this instance, it was suspected that there was some disease in the origin of the nerves supplying the muscles of the arm, and a seton was inserted in the neck, but without any good effect. The muscles continued to waste, and the limb to lose its power. In neither of these cases was any pain experienced.

A short time after I had seen this last case, a man applied to me, for a severe pain in the left deltoid muscle. He also had been accustomed to carry very heavy weights, and latterly experienced great weakness in the limb. As in the former case, the muscle was much wasted, and was very nearly half the size of the other. Considering the pain in this instance to be rheumatic, and confined to one muscle, acupuncturation was recurred to, and three needles were inserted in different parts of the deltoid muscle. The result was most satisfactory; the pain disappeared, and the muscle gradually recovered its bulk. From that time to the present, now seven years, there has been no return of the affection, though he suffers severely from a chronic inflammation of the bronchi.

Several cases of a similar nature, have occurred to me since that time, but in very few has any relief whatever been afforded. In one case, I am unable to come to a satisfactory conclusion, as to whether or not the paralysis was real, or whether it was not a trick. If the latter, the deception was managed with consummate dexterity.

The girl was eighteen years of age. She had, according to her own account, suffered excessive pain for several hours on the Sunday evening, in the left arm and shoulder, which terminated in the total abolition of power in the limb. I saw her on the Tuesday. There was at this time, no other affection than the paralysis of the arm, and she had no power either of sense or motion. As, however, she was of a plethoric habit, she was bled and purged, and every attempt was made to excite contraction in the muscles of the limb, but without success. The muscles of the arm were perfectly flabby, and she exhibited no sense of pain on pinching the limb. Moxa was now applied both over the deltoid muscle and over the cervical vertebræ; and though she complained of much pain, I could not perceive, with the greatest attention, any motion in the arm or fore arm. It was now decided to insert a seton in the nape of the neck, and this remained in for nearly six weeks. A few days before it was removed, she stated that she had a little feeling in the hand, but there was no increase of power. On the Tuesday she came as usual to the dispensary, and stated that the seton had escaped by accident on the preceding evening; the limb still remained in the same state. She was told to come again on the Friday, *when another seton should be inserted.* She did so, but she had now recovered the entire motion and sensation of the arm. Her account was, that on the Wednesday evening, her arm was suddenly raised by a strong convulsion of the muscles, and that from that time, she had had the whole power. In this instance it may be doubted how far the fear of having another seton had influenced her recovery.

These cases occurred several years ago, and for some time none other presented themselves. Last May, however, two indi-

viduals applied for relief for affections of the same kind. The first was a recent case; the latter had existed for some time.

The first was a locksmith by trade, and had been suffering from severe pain in the right shoulder for some time. Considering the affection to be rheumatic, colchicum was ordered, and in a few days he returned, free from pain, but utterly unable to raise his arm; the deltoid muscle, in this, as in all the other cases, being exceedingly flabby.

There was then, in this case, a manifest local want of power in the muscles of the part, and it was by no means apparent that there was any affection of the nervous system elsewhere. If, therefore, electricity can be expected to be useful in any case, it would be, I conceive, in such as this, in which there was no actual change of structure, but only a local deficiency of muscular irritability. With this view, therefore, some slight shocks were directed upon the shoulder, and with considerable benefit. At the time of being electrified, he obtained more power, nor did the amendment entirely disappear, though it had somewhat diminished, at his next visit, four days after. The shocks were again repeated, and with similar results; and after the third application, he stated that he fully recovered the use of the limb. I have not seen him since.

The last case is still under treatment, and is the exact counterpart of that which is first mentioned, excepting that it is confined to the left arm. The loss of power had commenced in the muscles that raise the shoulder, but had gradually been extending downwards for four months. She could still, however, do any thing under the elbow. There was slight pain on pressure in the deltoid muscle, and she experienced considerable pain in the shoulder joint, upon an attempt being made to raise the arm. The muscles of the arm were all greatly emaciated. In this instance, acupuncturation was practised several times, but without any apparent relief, and at length recourse was had to electricity. This had the effect, in the first instance, of preventing the farther progress of the complaint; and latterly she states that she has acquired additional strength in the limb, though this is not very apparent to an observer. There can, however, be no doubt, that the muscles have somewhat increased in bulk. This woman had also been accustomed to carry heavy weights. The circumstance particularly calling for notice in these cases, is the pain preceding the loss of power, and the apparent facility with which, while in this state, the farther progress of affection was prevented. Are we also to regard the fact, of several of these persons having been accustomed to carry heavy weights, as merely accidental; or is there any connection between the exertion thus required, and the after loss of power, as cause and effect? Again, in what way is the pain which simulates rheumatism in its character, to be regarded? And in what way does electricity act?

The impression on my mind is, that this is primarily an affection of the nerves supplying the elevating muscles, and that they may

have been injured by the straining necessary in raising or carrying heavy weights. I am the rather inclined to this opinion, from having observed a similar wasting of muscles, in a case in which the ligaments of the shoulder joint had been strained, if not broken, and in which, though actual dislocation did not take place, the os humeri hung at a distance from the scapula; the space between the acromion process and the os humeri, being increased to nearly an inch. Now here it was impossible that much straining of the nerves should not take place, and we know that, without the full influence of the nerves, the muscles cannot act. Dr. Wilson Philip's experiments also prove that secretion is under the superintendence of the nerves; and if secretion, then also nutrition must be concluded to be equally under their superintendence. Farther, supposing that a function be not exercised, diminution of power invariably succeeds, and generally wasting of the organ, which is the instrument of the function. Thus, then, we should first have an affection of nerves producing pain, and impeding the use of the muscles; secondly, the muscles being dependent to a certain extent for their nourishment upon the nervous energy, wasting would ensue, and loss of power. And again, the loss of power necessitating a still farther diminution in the exercise of the organs, would increase the emaciation, till not only the function of the muscles would be annihilated, but their structure almost, if not entirely, would be wasted away. I throw out these hints with considerable diffidence, yet, as in all the cases I have seen, the affection attacked persons who were dependent upon their labour for their subsistence, it is an object of no small importance to ascertain the nature of this disease, and to stop it in its first progress. How far electricity will be found serviceable in these cases generally, remains yet to be ascertained. Its action, however, is that of a stimulant, and though it probably is not the same with the energy afforded by the nerves, it has evidently the power of exciting that energy, and where the structures remain unimpaired, it might be expected to be useful.

ARTICLE IV.

A Case of Diabetes Insipidus.

BY JOHN DARWALL, M. D.,

Physician to the Birmingham Dispensary.

February 28, 1830. Catherine Lakin, aged 36, complains of excessive thirst; a very considerable quanity of amber coloured urine, equal to, as she thinks, if not more than, the quantity of fluid she drinks; skin dry and harsh; the cuticle every where peeling off in large flakes; no perspiration whatever, and always feels cold; very little appetite; countenance that of a person nearly fifty years of age; much emaciated; tongue furred and very rough, with red patches and streaks, posteriorly brown;

anorexia; flatulence; clangor intestinorum; bowels relaxed; pain in the right hypochondrium increased by pressure; no prominence of the liver, but the pain extends along the situation of its edge, and is most intense as it approaches the pit of the stomach; catamenia regular as to time, but very pale; much leucorrhœa and prurigo vaginæ; occasional pain in the back, but not increased by pressure, neither in the situation of the kidnies nor elsewhere; some dyspnœa; very low spirited; has been married seventeen years, but has had no children; pulse 100, of moderate strength.

Has been ill for nearly a year and a half. The thirst came on first about that time, and she did not make much water till some months afterwards. The thirst was removed about September, 1828, and returned again last September.

She had, two years ago, a sore leg, having experienced much pain in the leg for six years before. It has not been healed for more than six months. The sore was open when the disorder began. Specific gravity of the urine, 1,004; colour, pale amber. Passed between five and six quarts of urine between twelve o'clock yesterday and ten this morning.

26th.—Has made seven quarts of urine, and drank eight quarts of fluid within the last 23 hours. Has eaten three ounces of bread and five oysters. Has been purged five or six times, and passed much watery matter away. The evacuations were very offensive. Much clangor intestinorum. Not so much pain in the right hypochondrium.—Sulphur bath every other morning. Pulv. ipecacuanhæ comp. ℈ss. bis die.

March 2.—Perspired slightly the first day in the bath, but not at all the second. Bowels still open. Skin does not appear quite so harsh. Passed nine quarts of urine from nine o'clock yesterday till nine o'clock this morning, and drank about the same quantities. Tongue cleaner. Says she feels better, and is more cheerful; and has not so much pain in the side. Appetite no better: vomits when she attempts to eat meat.

March 5.—Skin scarcely so dry; tongue certainly improved; is not weakened by the bath; pulse 80; bowels open three or four times a day. Takes scarcely any solid food.—Cont. Balneum sulp. quotidie.

March 9.—Improving both in her appetite and her general feelings. Is purged much every day; much pain and griping with each evacuation.—Rep. balneum quotidie.

March 12.—Perspired in the bath a little yesterday, but not at all on the tenth. Appetite rather better; bowels moved only once or twice—still relaxed. Evacuations black and offensive. Pain rather severe along the edge of the liver. Other symptoms much the same. Pulse 80.—Applicentur hirudines xii. parti dolenti. Cont. pulveres.

The report from this time little varies in its purport. She gradually continued to improve in her strength and spirits and appetite till the 4th of May, when she ceased her attendance.

Her urine and thirst however were little diminished.—The following is the table of the fluid taken, and the urine passed.

DATE.	FLUIDS TAKEN. qts.	pts.		URINE PASSED. qts.	pts.
March 2.	5	1	—	6	0
3.	5	0	—	5	0
4.	5	1	—	6	0
5.	4	1	—	5	0
6.	5	0	—	5	0
7.	5	1	—	4	0
8.	7	1	—	4	0
9.	5	1	—	4	1
10.	6	1	—	5	1
11.	6	0	—	4	1
12.	4	0	—	3	1
13.	5	0	—	4	1
14.	5	0	—	4	1
15.	6	0	—	3	0
16.	6	0	—	7	0
17.	5	0	—	5	0
18.	6	0	—	7	0
19.	5	0	—	5	0
March 20.	4	1	—	4	0
21.	4	1	—	2	1
22.	5	0	—	4	0
23.	4	1	—	3	0
24.	5	1	—	5	0
25.	5	0	—	3	0
30.	6	0	—	5	0
31.	6	1	—	5	1
April 1.	5	1	—	5	0
2.	4	1	—	5	0
3.	5	1	—	5	0
4.	5	1	—	3	0
5.	5	1	—	2	0
6.	5	1	—	2	0
May 5.	5	0	—	5	0
6.	4	1	—	4	0
7.	5	1	—	4	0

August 15.—I have seen this woman a day or two ago, and she has gained flesh, is stronger, and states herself to be in good health. She still, however, drinks above two quarts a day, and makes nearly an equal quantity of water. The skin also continues dry and harsh.

About the same time, another case of the same disease was under my care, of which also I have notes; but the disease was, in her case, accompanied with inflammation of the bronchi, and was not benefited by any of the means that were employed.

ARTICLE V.

Some Remarks on the Humoral Pathology, and the Functions of the Stomach in Health and Disease.

BY JONAS MALDEN, M. D.

All living bodies are wasted and repaired by their own actions. Every secretion in organic beings is the result of vital actions. All secretions are subtracted from the quantity of that circulating fluid, (called in animals, their blood) upon which the nutrition of every part of the body immediately depends. Secretions may be divided into three kinds:

1st. Adjuvant;—where what is separated from the mass of blood is designed for some useful purpose in the economy, as bile, mucus, salivary and pancreatic secretions, tears, moisture of serous membranes, &c.

2d. Detractive, (or Excretions proper)—as pulmonary exhalation, cutaneous transpiration, urine, and part of the alvine dejections.—By detractive secretions, that is removed from the

body which would be superabundant or hurtful if retained. To these the lymphatic absorbent system is subservient.

3d. Nutrient.—These take place, during healthy life, in every part of the body. They are the result of the action of extreme vessels imperceptibly minute. This action is modified by the state of the part supplied, so that that is separated in quantity and quality which the structure requires, and no more. In each part it may be either equal to or greater than its loss by absorption, or less. During that period in which the bodies of animals are growing, the supply, by nutrient secretion, in every part, is greater than the loss—and this is compatible with health: but after that period it is for the most part equal to it, as long as all the living functions are duly performed.—To nutrient secretion, the functions of the digestive organs, and lacteal absorbent system, of the lungs, heart and blood vessels, are subservient.

The second cause of waste sensorial action, requires rest to aid the repair of its material instrument, the brain. This suspension of sensorial action is sleep, and has been emphatically called, by the poet, the "chief nourisher at life's feast." During the sleep of a person in health, nutrient secretion is, in every part of the body, proceeding with its greatest activity.

Regarding, then, secretions (adjuvant and detractive) and sensorial action as the causes of waste, we shall find, in nutrient secretion, aided by occasional sleep, or suspension of sensorial action, the only mode of repair.

The first important link in the chain of functions subservient to nutrient secretion in man, and animals analogously constructed, is the change which the aliment, introduced by the mouth, undergoes in the stomach, which change has been called the digestion of the food. If then the stomach perform its functions feebly or irregularly, the health of the whole system is endangered; even the remotest part of the frame, becoming, from such cause, liable to imperfect or improper nutrient secretion; the last link in that chain of functions, of which we have considered digestion as the first.

This view of the subject compels us, in reasoning on the phenomena of many chronic diseases, (so frequently referrible to this source alone) to retain no inconsiderable portion of the Humoral Pathology, which, of late years, it has been too much the fashion to reject. "It seems to me (says Dr. J. Fothergill*) that in the cure of all chronic complaints, *however distant their seat may be from the stomach*, those will have the greatest success who attentively consider the present state of this organ; who remove every obstruction to its performing the office of digestion with ease, constancy, and expedition. For if digestion is well performed, the chyle is proper; the blood produced from this chyle is natural; the secretions, nutriment, and excretions, will be re-

* Med. Obs. and Inq. v. 1, p. 314.

gular; health, strength, and activity ensue; diseases vanish. If digestion languish, the contrary happens, in spite of the best specifics, unless one part of their virtues be to restore the injured faculties of digestion to their pristine and natural state." In their contemplation of the vital action of the solids, the followers of Hoffman and Cullen seem to have forgotten the immediate origin of the solids, which, in the living body, must circulate as fluids in our vessels, before they can be separated to form and repair even the vessels themselves. Two thirds, at least, of the weight of the human body consist of matter in a fluid state; and is this passive in the midst of activity and life? Leaving the disputed point of the life of the blood, out of the question, is it not obvious that all muscular or contractile, containing cavities, be they vessels or not, are subject to the stimulus of their contents? and is not this of two kinds, chemical and mechanical? the result of quality and quantity? If these postulates be granted, in how many instances must those modifications of vital action, which in the view of some writers constitute, altogether, disorder or disease, be produced by a depravation, deficiency, or excess, of the fluids. The fact is, that the fluids and the solids are so intimately connected in their action and object, in the production of vital phenomena, that it must often be difficult, nay, in the present state of our knowledge, impossible, to say, (when disordered action has taken place,) in which of the two the first change from a healthy state occurred. But when this change has once happened, if it be not so great as to give rise to acute, sudden, or violent disease; still, action and reaction incessantly proceeding between these component parts of our frame (viz. the fluids and solids) concur, at length, in frequently producing a deviation so multiform and complex from the ordinary state of the body, as to assume, under various circumstances, various forms, defying, for the most part, definition; affecting some functions and organs more than others, and hence often assuming a character, for a time, from the prominence of their peculiar symptoms. With the exception of occasional local excitement, the actions of the system generally become languid; the secretions scanty, irregular or depraved: this state of body is slow and insidious in its advances. The first changes escape the observation of the patient; and it is not till some serious local affection attracts his attention, that he is disposed to acknowledge himself ill.

This state of body in the horse is well known to grooms, and is expressed by the animal's being "out of condition." He is unfit for work, easily fatigued, listless, languid, and imperfectly nourished.

How many human beings do we daily see, who, to the medical eye, are "out of condition:" who have become habituated to their slender pittance of health, and crawl through life, either satisfied with their imperfect enjoyment of existence, or hopeless of a melioration of their lot. The medical term "cachexia"

was originally designed to express the state I have attempted to describe. Now, I do not mean to beg the question, but I think I may state it as a fair practical inference, that in nineteen of these cases out of twenty, the first cognizable morbid change is in the fluids. Without perfect sanguification, every function languishes; but it is obvious that nutrient secretion, of all functions the most important, upon which the strength and vigour of every part depend, must, in degree, fail when the stream from which it draws its supplies is scanty or polluted.

The imperfection of our chemical knowledge, as applied to the analysis of animal and vegetable substances, is in nothing more apparent, than in the trifling differences discoverable by its application, in the blood, modified by all the various circumstances of health and disease. Who, that is acquainted with the laws of the animal economy, does not know the amazing difference that exists between the powers of venous and arterial blood, and yet how little light does chemistry throw upon this difference. Who, that has carefully watched the progress of protracted disease, does not feel inclined to infer that blood sometimes circulates almost as remote in properties from that fluid in health, as venous from arterial blood? What must be its state in the last stages of long-continued fever? What in general dropsy? What in tabes mesenterica? Sooner or later it becomes inadequate to, or unfit for, the purposes of the system; and if other causes were not operating, this alone must soon prove sufficient to arrest the actions of life.

Now the catenated functions on which sanguification mainly depends, are—digestion, chylification, lacteal absorption, and respiration. Dismissing, then, for the present, the consideration of the last three, I shall confine myself, in this essay, to the discussion of the healthy and disordered functions of the stomach, with the design of showing the importance of correcting its slightest and earliest deviations from the standard of healthy actions, if we wish to avoid all the calamitous consequences which may, sooner or later, follow the neglect of proper precautions or remedies: for in far the greater number of cases, cachexia, with its numerous and multiform progeny of disease, owes its origin to derangement of the functions of the stomach. But it is not only by producing imperfect sanguification that disorders of the stomach, if neglected, involve the general health. Its various sympathies produce disordered action in remote or contiguous parts; and the structure of the stomach itself frequently undergoes an irremediable change, in consequence of continued irregularity in its functions. Nor is this all: for parts sympathetically excited into unhealthy action, often undergo organic change in consequence of it, constituting diseases apparently so remote from their real cause, that their dependence upon it is, no doubt, in many instances overlooked.

Muscular Functions of the Stomach.—The stomach is a muscular containing cavity. The muscles with which the human sto-

mach is endowed are of great tenuity, white in colour, and disposed between its inner and outer tunic in a thin layer. They are so arranged as to enable the stomach to adapt itself, in every part, to its contents; and when empty, to contract equally upon itself. There is a circular band of muscle, of greater thickness, surrounding and embracing the pyloric orifice. The natural stimulus of these muscles, the ingested aliment, is not applied to them immediately, but to the inner tunic of the organ. The muscles act in conseqnence of the application of the stimulus to this part; and their action is modified by its state, (whether of greater or less sensibility) and the nature of the stimulus applied. This is a general law, applicable to all muscular or contractile containing cavities, be they vessels or not. The mode of action of the muscles of the healthy stomach, under the ordinary circumstances of digestion, it may be difficult experimentally to ascertain; but it has been satisfactorily proved that there is no analogy between the action of the strong muscular stomach (or gizzard) of granivorous birds, and the delicate membranous stomach of man, and other animals, whose food is previously masticated in the mouth. The mode of action of the muscles of one containing cavity (the urinal bladder) is known: the extrusores permit the organ to be distended to a certain point, and then suddenly and forcibly contracting, while the sphincter relaxes, wholly expel its contents. The ordinary action of the muscles of the human stomach is not similar to this. They embrace its contents, to which, by a series of contractions, they impart a slow and peculiar motion. This motion is rotatory; at least at the large end of the organ, which, in the human subject, forms a cul de sac where the aliment is detained for a greater or less time, according to its digestibility, and the existing powers of the stomach. This motion, though rotatory as far as regards the mass, is such as to impel the digested portions gradually to the smaller or pyloric extremity of the stomach.—The pyloric may be considered as endowed with a regular sphincter muscle. Independently of the elective power which it appears to possess over the matter presented to it, so as to prevent, for the most part, the passage of undigested food into the duodenum, its position, both with regard to this intestine and the body of the stomach, is unfavourable to the transit of solid masses of undigested matter. For these reasons, it is only by repeated efforts that such portions of food, as from any cause remain undigested, are propelled through the pylorus into the duodenum.

The derangements of the muscular functions may be ranged under the heads of—1st, diminished action; 2nd, accelerated regular action; 3rd, irregular contraction; 4th, inverted action, which may be partial, as eructation and rumination; or complete, —in which case other muscles are, for the most part, brought into sympathetic action, constituting the act of vomiting.

From what has been before stated, it is evident that these various derangements of function of the muscles do not necessarily

imply a primary change in their condition: a change in the state of the villous surface of the stomach, or in its serous tunic, or some unknown condition of its nerves, or of their origin, may, separately or in concurrence, produce derangement of the muscular functions of this organ.

1. *Diminished action.*—Diminished muscular action of the stomach, is one of the most frequent concomitants of indigestion, and (hypothetically accounted for by the term loss of tone,) has been assumed by Dr. Cullen and others, as the proximate cause of what has been called idiopathic dyspepsia. After describing the symptoms of dyspepsia, he continues,* "that there is a distinct disease, attended always with the greater part of the above symptoms, is rendered very probable by this, that all these several symptoms *may* arise from one and the same cause; that is, from an imbecility, loss of tone, and weaker action in the muscular fibres of the stomach; and I conclude, therefore, that this imbecility *may* be considered as the proximate cause of the disease I am to treat of, under the name of dyspepsia." A little further on, he says,† "but I dare not maintain it to be the only cause of idiopathic dyspepsia." He then alludes to a diminished or depraved state of the secretions of the villous surface, as a sufficiently probable cause of a considerable difference in the phenomena of digestion, and as particularly calculated to give occasion to many of the morbid appearances of dyspepsia.

"This seems," he says,‡ "to be very well founded, and points out *another proximate cause* of dyspepsia, beside that we have already assigned." "But notwithstanding this, as the peculiar nature of the digestive fluid, the changes which it may undergo, or the causes by which it may be changed, are all matters so little known, that I cannot found any practical doctrine upon any supposition with respect to them; and as, at the same time, the imbecility of the stomach, either as causing the change in the digestive fluid, *or as being induced by that change*, seems always to be present, and to have a *great share* in occasioning the symptoms of indigestion; so I shall still consider the imbecility of the stomach as the proximate and *almost sole* cause of dyspepsia."

Now admitting that impaired action of the muscular fibres of the stomach, almost always accompanies indigestion, yet their dependence upon the state of the villous surface, or upon the nature of the ingesta applied to it, must never be lost sight of. To illustrate my meaning, I will relate a case of unequivocal idiopathic dyspepsia, of every day occurrence. A young gentleman in high health and spirits, not subject to indigestion, ate at his dinner some roasted mutton and rice pudding, with his usual appetite; after which, with his cheese, he ate some cucum-

* Practice of Physic, sect. 1193.

† Sect. 1195.

‡ Sect. 1196.

ber. Three hours after dinner, he had nausea, with a disposition to vomit, distended epigastrium, eructations, in which he recognized the flavour of cucumber, heart-burn, and occasional pain in the stomach and forehead. These symptoms distressed him more or less till the middle of the night; he then fell into a sound sleep, from which, next morning, he waked, refreshed, had no unpleasant feelings in the stomach, ate his breakfast with his usual appetite, but had slight diarrhœa before noon. Were there not present, in this case, a sufficient number of the diagnostic symptoms of genuine dyspepsia? Yet no pathologist would here contend for an imbecility or loss of tone in the muscular fibres, as the proximate cause of the symptoms, or found his practical indications upon such a supposition. There was present, impaired and irregular action of the muscles of the stomach, as indicated by distension and eructation; but these muscles obey impressions made upon the villous coat; and how was this affected? There had been presented to it a substance which its secretions were incompetent to digest, it soon began to act, therefore, as an extraneous and irritating body; a secreting surface unnaturally irritated, has its secretions altered in quantity or quality; this is a general law. The muscular actions of the stomach which under the usual circumstances are catenated with a healthy action of the villous surface, in the case under consideration, were impaired; because the villous surface with which they invariably sympathise, was, from an obvious cause, performing its functions with difficulty. This difficulty continued until either the cucumber was at last digested, or what is more probable, from the diarrhœa of the following day, until after repeated efforts, it was propelled, imperfectly digested, into the duodenum.

There are instances of diminished action of the muscular fibres of the stomach, as indicated by uneasiness and epigastric distension after meals, and not unfrequently accompanied by pain or sense of fulness in the head, with flushing of the face, but which often subside without the snpervention of the more urgent symptoms of dyspepsia. I think I have been able, from repeated observations, to trace this affection to the operation of one of two causes, and in some instances to the influence of both of them.

1st.—Torpid bowels, frequently depending upon impaired biliary secretion.

2ndly.—Diminished absorption of fluid from the stomach itself, always connected, either as cause or effect, with defective renal secretion.

From the continuity of the alimentary canal from the fauces to the anus, and the mutual dependence of its successive actions, it is subject to various sympathetic affections both of sensation and motion, which I need not at present enlarge upon; but it is in concurrence with this law, that diminished action of the intestines is frequently continued upwards to the stomach, and digestion is consequently performed slowly and difficultly. Habitual costiveness, from whatever cause arising, if not obviated betimes, is apt

to bring on this insensibility to ordinary stimuli in the muscular fibres of the stomach, as indicated both by the symptoms and the most effectual modes of relief. Habitual costiveness so often depends upon deficient or depraved biliary secretion, that it, and the impaired digestion dependent upon it, are frequently only permanently curable, by means directed to restore the healthy functions of the liver. A patient labouring under this form of dyspepsia, complained to me that he felt as if his bowels were asleep. In this variety of dyspepsia, the mouth is generally clammy, and the tongue much furred, particularly in the morning before breakfast; which is not usually the case in the dyspepsia depending upon a morbid action of the villous surface of the stomach, in which affection the mouth is for the most part unusually moist, and the tongue often natural in its appearance, or rather slimy than furred.

Diminished absorption of fluid from the stomach.—When we arrive at the consideration of the structure and functions of the villous surface of the stomach, its absorbent powers will be treated of at length; suffice it for the present to state that, in a healthy stomach, the absorption of the watery parts of the ingesta is most rapid, with the design, probably, of bringing the secreting surface in juxtaposition with the more solid contents, to enable the muscular action of the stomach to impart its peculiar motion to the mass, and to guard against an undue dilution of the gastric secretions. Now, some dyspeptics, that have a scanty flow of high-coloured urine, and, for the most part, dry skins, suffer chiefly, after the sudden ingurgitation of liquids. Such persons cannot drink two cups of tea in the morning at their breakfasts with impunity. The epigastrium remains uncomfortably distended for three or four hours afterwards; there is vertigo, noise in the ears, sometimes a heavy pain over the eyes, often dimness of the sight, muscæ volitantes, and other optical deceptions. In the mean time the kidneys are inactive. The subsidence of the epigastric distension, and the consequent disappearance of the above symptoms, which vary in their duration from two to four hours, are generally accompanied by a flow of urine.

Accelerated regular action of the muscles of the stomach, is not a very frequent occurrence. When it happens, it generally produces the symptoms of lienteria. It most frequently seems to depend upon accelerated regular action of the intestines, continued to the stomach by sympathy. Thus, neglected diarrhœa becomes lienteria. The aliment is no longer detained in the stomach long enough to be much (if at all,) altered, by its digestive powers. It passes, soon after its ingestion, much in the same state in which it has been swallowed. The exhibition of drastic purges sometimes, will unexpectedly produce this affection; or a sudden return of the regular action of the intestines, after protracted costiveness.

A lady, who, during her pregnancies, was in the habit of neglecting her bowels, permitting them to remain bound for three or four days together, was, after one of her confinements, affected with alarming palpitation of the heart, and frequent syncope, with a dread of impending dissolution. The bowels remained bound, and in the course of the colon, there was readily discoverable preternatural fulness and hardness. Purgatives of aloes and senna, with the occasional assistance of enemata, were administered. By perseverance, the large intestines were unloaded, and an immense accumulation of hardened scybala was voided. The palpitation and syncope disappeared, as if by magic. The tongue, which had been much furred, became clean, and the appetite for food, which had altogether failed, gradually returned. Small doses of rhubarb and aloes kept the bowels open twice a day, but for some time, the motions, which were loose, contained the aliment she had taken, little altered by the stomach. In this case, I conjectured that the restored action of the before torpid intestines excited, by sympathy, accelerated regular action of the muscles of the stomach, so that the ingesta were not detained long enough in its cavity to undergo their proper change. The bowels, however, were perseveringly kept regular, and in a few days, the functions of the stomach were duly performed. This state of stomach sometimes attends the last stages of phthisis tuberculosa, tabes mesenterica, and other diseases, which, at their close, are marked by colliquative diarrhœa. All the aliment rapidly passes by the bowels unchanged. When this occurs, it is indicative, in such cases, of the most hopeless debility, and often of ulcerated villous coat, and is soon followed by death.

3. *Irregular contraction.*—The muscular action of the stomach, when regular, is performed by successive contractions and relaxations, in a series from the cardia towards the pylorus. If the contraction of any portion of the muscular fibres take place, when that portion ought consecutively to be in a state of relaxation, such contraction would be called irregular. There is a striking analogy observable in this, as in many other instances, between the functions of the stomach and bowels, each in health performing regular consecutive contractions, and each being liable to irregular contractions. The prominent symptom produced by it, is, in both instances, strikingly similar. It is pain. When it occurs in the bowels, it gives rise to gripes-tormina. This name is not applied to the pain arising from a corresponding cause in the stomach. To distinguish it from other pains affecting that organ, it has been called spasm of the stomach, spasmodic pain of the stomach, gastrodynia spasmodica. It may be produced by irritating, indigestible, or acrimonious ingesta. All the acrid metallic poisons produce it; it frequently depends upon increased sensibility of limited portions of the villous surface; for which reason it is a common symptom of those superficial patches of inflammation, which, in mucous membranes, often terminate in ulcerative absorption. The gastrodynia ulcerosa of Sauvage, is decidedly of this character.

A poor char-woman, aged 60, suffered for many years, at times, from sudden and violent pain in the stomach, frequently followed by pyrosis, eructation of air, and cardialgia. She was always more relieved by cupping in the epigastrium, and blistering the same region, with the use of aloetic purgatives in frequent and divided doses, than by any other means. She sometimes found immediate relief from the use of ardent spirit; but it was followed by what she called a distressing "broiling" in her stomach, and the course of the œsophagus, and the next attack of pain, which soon recurred, was always exacerbated by it. Hot tea would bring it on; long fasting would be sure to do it. Cold water did not. Animal food, and milk, agreed with her; vegetables did not. When in a fit of pain, she found relief from sitting almost double, and pressing firmly on the pit of the stomach, although, when the attacks of pain were off, she had an epigastrium that ill bore even slight continued pressure. A year after I first saw her, she died suddenly from apoplexy, after repeated attacks of vertigo, for which she had been bled several times and purged.

I examined the stomach thirteen hours after death, and found no marks of disease, excepting in the villous coat, about the centre of the larger curvature, three small superficial ulcers, nearly touching each other, and surrounded by an inflamed appearance, of the breadth of an eighth of an inch. The edges of the ulcers were even and smooth, and soft.

The pain arising from irregular contraction of the muscular fibres of the stomach, may, for the most part, be distinguished from inflammatory pain of the same organ; by the relief experienced from pressure; by the pulse for the most part being little quickened; by the absence of prostration of strength, and generally of vomiting. It has sometimes been confounded with the pain attending a biliary calculus impacted in the ducts; but a little attention to the exact seat, kind, and direction of the pain, and to the difference of the other gastric symptoms, as well as of the biliary functions in the two affections, ought at all times to enable us to distinguish them.

Spasmodic pain in the stomach has appeared sometimes to be produced by an inverted growth of the ossified ensiform cartilage, acting as a mechanical irritant upon a small part of the external surface of the organ.

4. *Inverted action.*—Inverted action of the stomach is either partial or complete. The partial inverted action has two varieties; the first, in which air is extricated, constituting eructation. The second, in which a portion of the imperfectly digested aliment, mixed with the secretions of the stomach, is returned into the pharynx or mouth, constituting rumination.

When air is evolved in the stomach, owing to chemical changes in the ingesta, or secreted as some physiologists (among whom is John Hunter,) imagine, may sometimes be the case; it must, of course, be much rarified, being at the temperature of 97, or

more, and will exert a considerably expansive force upon the organ, acting as a mechanical stimulus to its muscular fibres, and producing contractions in them. Its escape, under these circumstances, is generally effected through the cardiac orifice, and its passage into the intestines, I have reason to believe, is a more rare occurrence. It seldom happens that the contraction of the stomach is so sudden and so perfect, as to expel all the air it may contain at once; but it seems rather to be excluded by a succession of smaller and weaker contractions. The force with which enormous quantities of air are sometimes exploded from the stomach of some subjects, is astonishing. It is a frequent occurrence in elderly females of the lower class of society, who have subsisted much on vegetable food and tea. I should suspect that in these cases, the inverted action is nearly complete, as I have seen it attended with almost as much contraction of the abdominal muscles as attends vomiting.

Rumination—seems to depend upon the irritation of acrid ingesta, or secretions, or both, confined to a limited portion of the stomach, near to the cardiac orifice, as cardialgia, a sensation of circumscribed heat, or "broiling," as patients generally call it, referred to the situation of that portion of the stomach, frequently precedes it. Oily substances particularly, if much fluid be swallowed at the same time, are not an unusual cause of it in stomachs the functions of which are otherwise correctly performed. Buttered toast and tea, the floating fat of broth, rich pie crust, &c. are well known to dyspeptics, as productive of this very unpleasant symptom.

Vomiting.—When the inverted action is complete, the whole, or nearly the whole, contents of the stomach, are voided upwards through the œsophagus; but, by the experiments of Dr. Haygarth and others, it was ascertained that the muscular fibres of the stomach had not alone sufficient power to do this. The diaphragm and abdominal muscles are brought into sympathetic action, and, by their simultaneous contraction, forcibly compress the organ (as it were,) between two planes, and give most powerful assistance to its otherwise ineffectual efforts; and Dr. Philip, in his work on the vital functions, has shewn, by many experiments, that the integrity of the eighth pair of nerves, is essential to the sympathetic contraction of the assisting muscles; the efforts to vomit proving ineffectual, in every instance, after the division of those nerves.

The causes of vomiting may be divided into, 1, irritant,—from ingesta, or from inverted action of the duodenum; 2, mechanical, —distension, and external injury to the stomach; 3, sympathetic; remote, including passions of the mind; continuous; contiguous.

The stomach is a most watchful guardián of the health of the body, and fortunate it is for the human race, that it is endowed, as it were, with such vigilance and discrimination. For in civilized society, where the taste is tempted, and the appetite pam-

pered, by inexhaustible variety in food, ingesta are often swallowed which, if they did not offend in quantity, would, from their quality, baffle the efforts of the stomach to digest them, and thus, were they not rejected by vomiting, would, by passing into the duodenum, or by long lingering in the stomach, become a fruitful source of irritation, disturbance, or interruption of most important functions, and a most powerful cause of disease.

There are many facts that render it probable that the brain must be, in some manner, acted upon, before complete vomition can take place. The circumstance before mentioned, of the division of the eighth pair of nerves being attended with the loss of this power, much supports this opinion; but it has, moreover, long been known, that compression of the brain producing apoplexy, is attended with a state of stomach that renders it insensible to the action of the most powerful emetic substances introduced into it; and it is not till the compression of the brain is removed, that their operation takes place. When, in fractured cranium, the brain is compressed by a portion of bone being driven upon it, no vomiting supervenes, but after the trephine is applied, and the depressed bone is elevated, vomiting, for the most part, occurs.

It will not be irrelevant here, to direct our attention to another pathological fact frequently observed, that where, from some unknown cause, the muscles of the stomach refuse to obey the stimulus of an irritant applied to its villous surface, (indigestible food for instance,) the head is liable to a variety of distressing symptoms, as long as the offending cause continues in the organ. Head-ache, vertigo, dimness of vision, muscæ volitantes, are often referrible to this cause alone.

A gentleman, who suffered from a complication of nervous ailments, assured me that he could state with accuracy, the moment almost at which any undigested food passed (as he expressed it,) through his stomach, for it was attended with instantaneous relief from heartburn, and concomitant head-ache, giddiness, and incapability of application to business or books. And from what has been remarked, there does not appear any thing very improbable in this. Emetics act, therefore, it is probable, by a peculiar impression upon the nerves of the stomach. I have mentioned under the head of irritant causes of vomiting, inverted action of the duodenum. It is evident that this produces vomiting, by introducing, through the pyloric orifice into the stomach, the contents of the duodenum and bile in particular, as is instanced in cholera morbus; where a larger tract of intestine is involved in the inverted action, ileus is formed, and fœcal matter is vomited.

In both these cases, vomiting is the more readily excited by the foreign matter thus introduced into the stomach, from the proneness of inverted action of the muscular fibres of the intestines, to be continued to those of the stomach. Whether *distension* alone be adequate to the production of vomiting, is, I think, a matter of doubt. Large and rapid potations of cold water do

not produce vomiting. If the nature of the substance swallowed be such as to produce a peculiar impression upon the nerves of the stomach, then distension of the organ seems to facilitate its action. Warm water, drunk in large quantities, will very generally excite vomiting. In smaller quantities, it seldom proves emetic. Port wine is not necessarily emetic, and a very large quantity may be gradually swallowed without producing vomiting; but if it be drunk fast, as well as copiously, vomiting is readily excited by it. A violent blow on the stomach will produce vomiting. It is well if it do no more, for instant death has ensued from this cause. Wounds in the stomach produce vomiting, and if the villous coat be perforated, the nature of the injury is at once betrayed by the vomiting of blood. The unappeasable efforts to vomit, render the treatment of such wounds very difficult, but (what is extraordinary) they are not necessarily fatal, as there are instances recorded of recovery, after very serious wounds of this important organ.

The remote causes of sympathetic vomiting are numerous; blows on the head, producing concussion of the brain; some diseases within the cranium, as the acute hydrocephalus of children in its earlier stages; vertigo, produced by moving, or apparently moving, objects before the eyes; a particular motion communicated to the whole body by certain vehicles, as a ship, a carriage, or a swing. The causes of sea-sickness are involved in great obscurity; but from my own observation, I am inclined to think that they are much connected with the state of the respiration, as landsmen, when first subjected to the motion of a ship at sea, do not breathe in the same manner as the sailors, but evidently make longer expirations, and shorter inspirations, than they do; the long expirations coinciding with the descent of that part of the vessel in which the affected individual is placed. As such a modification of the function of the lungs, must be attended with an irregularity in return of venous blood from the head, it is not improbable that a consequent state of brain, may be the remote sympathetic cause of that death-like sensation, and incessant vomiting, which no one that has once experienced them, ever forgets. Nauseous smells will excite vomiting, or even the bare recollection of them.

So far I have endeavoured to condense into a small space, much that relates to derangements of the muscular functions of the stomach; but must, from the limits allotted to this essay, defer the prosecution of this subject to a future occasion.

ARTICLE VI.

Observations upon Extra Uterine Fœtation.

BY THOMAS NEWELL, M. D. CHELTENHAM.

It is an observation which must frequently have occurred to those who have had much experience in the practice of medicine, that the relation of cases of an incurable nature, and in which our art can only afford temporary alleviation, is not altogether without its advantages. Nor should it be objected, that the records of medicine furnish many examples of a similar nature; or that no new information can be obtained, by multiplying their number. This may, in some measure, be true, as applicable to those whose reading has been extensive; or who may possess large collections of medical books, through which they are scattered; but to those who may not enjoy these advantages, and more especially to the junior members of the profession, such relations must always be interesting.

The examination, also, of the bodies, after death, of those whose diseases have been surrounded with difficulties or obscurity, and which, by this means, have been ascertained to have been hopeless of a favourable termination during life, enables us, among other advantages, to avoid holding out delusive hopes of recovery, when similar cases occur, and which must be very important, not only to the feelings of anxious friends and connections, but to the reputation of our art, and the practitioners of it.

The relation of instances of extra uterine fœtation, of which we are in possession of many examples, will confirm the truth of these observations. Among the great number that are recorded, particularly in the writings of physicians within the last fifty years, the symptoms that have attended have been so various, and often so similar to those of diseased structure of different organs in the cavities of the abdomen and pelvis, that considerable doubt has often been entertained of the real nature of the changes which had taken place; and much difficulty has been found, in forming an opinion as to their probable termination.

The process of generation is one over which nature has been curious to throw a veil; and, although the deviations from its natural progress, are less frequent in the human subject than in many other animals, yet its occurrence has been by no means uncommon. Nor have the consequences been similar in all cases; for in some, symptoms have early taken place, which have speedily led to a fatal termination; while in others, the event has been for a long time protracted; and in some rare instances, life does not seem to have been shortened by its occurrence, but the fœtal substance, after undergoing considerable changes, has been retained to a very advanced period of life.

An interesting case came under my observation a few years ago, in which I had an opportunity of examination after death. The unhappy patient belonged to the highest class of society, and had the advantage of the opinions and advice of the most eminent professional men, before she came under my care, which was about three years after she had become pregnant. At this time, symptoms of extensive mischief in the cavity of the abdomen, had for some time existed, with much constitutional indisposition, accompanied with hectic fever, loss of flesh and strength, and other appearances, which are the usual forerunners of dissolution.

I shall first give an account of the inspection of the body, which took place thirty hours after death; and afterwards make some reflections upon the symptoms, as well as draw a comparison with other cases on record; and with another which has also fallen under my own observation, and which was attended with very uncommon circumstances.

Upon dividing the integuments of the abdomen, a considerable quantity of sanious and semipurulent fluid escaped, in colour resembling coffee; together with a portion of the ordinary contents of the bowels, of the most offensive smell and character. A large tumour occupied a great part of the cavity, extending upwards to the umbilical region, and inclined rather more to the left than to the right side. From repeated attacks of inflammation, extensive adhesions had been formed with neighbouring parts; and the peritoneal covering of the intestines, not only adhered extensively to the tumour, but they were also, in many places, firmly united together, producing considerable confusion of parts, and some difficulty in separating them from each other.

The surface of the tumour was covered with a thickened membrane, which was so tender that it tore open upon the smallest force being applied to it, and of about the thickness of a half crown. It was impossible to distinguish of what this membrane was composed. It was probably the peritoneal coat, blended together with the enveloping membranes of the fœtus, all of which had undergone changes from repeated attacks of inflammation. When this covering was removed, some of the bones of a full-sized fœtus, divested of their epiphises, were discovered, protruding through a mass of a yellowish colour, and of the consistence of cheese. It appeared as if the fat and muscular parts had, by some peculiar process, been converted into this caseous substance, and which was sufficiently firm to confine the bones in their original positions, after their own ligamentous union had been destroyed. The fœtus was placed horizontally, with its head to the right side, and the face to the back of the mother. The head was lying in contact with that part of the intestine which forms the commencement of the colon, and, from the effect of pressure, absorption had taken place, by which a considerable opening had been formed, between the sac containing the fœtus and that intestine. Near this opening into the intestine, and partly protruding into it, was the occipital bone of the fœtus, which was

separated at the sutures from the other bones of the skull. Thus it appeared, that nature had made an effort by the formation of this communication, to get rid of the fœtus by that outlet. The uterus, and the right fallopian tube, were in a natural state; but on the left side, the fallopian tube was involved and obliterated in the tumour; nor could the placenta be distinguished, except a darker coloured portion of the caseous substance had constituted it, but which the same converting process had reduced to a similar consistence to the other parts of the tumour. It is not easy to understand in what manner these remarkable changes of structure are brought about, by morbid actions in human bodies; which, in this case, had converted all the soft parts into a uniform mass of the same consistence, having scarcely any appearances of organization; and it is equally incomprehensible, how the ossific process has been established, which has sometimes happened in these cases, and by which the whole of the substance becomes incased in bony cyst; a remarkable instance of it being recorded by the late Dr. Cheston, of Gloucester, in the 5th vol. of the Medico Chirurgical Transactions.

The patient had lived fifty-two years after conception had taken place. In this case, it may be observed, that there had been a general disposition to calcareous deposition, for not only were the aorta and large arteries much ossified, but the emulgents also; and the splenic artery was in this condition quite into the substance of this viscus. Dr. Cheston entertained the opinion, that this fœtus was nourished in the cavity of the uterus, to the full period of gestation, and attained its full size there; after which, "it escaped in an almost incomprehensible manner from the uterus," and became surrounded by this bony covering. I have often seen, and examined, this beautiful preparation; as well as formerly had much conversation upon it, with my much-esteemed and departed friend to whom it belonged; and I was always of opinion, that this instance had been extra uterine from the beginning; and that it differed from many others, in no other circumstances than the greater number of years it had been retained, and in the extraordinary ossific change which had taken place in it. If a rupture of the uterus took place when gestation was complete, and labour pains had come on, the circumstances attendant upon this accident, would have been present and noticed, but the experienced accoucheur who attended, only observed, "that the child offered for birth, but he could not deliver her without instruments." This, however, was not attempted, from the reluctance of the woman to submit to any operation. When the uterus is ruptured in labour, together with the peritoneum, of which I have seen three cases, and had an opportunity of examining two of them after death, the fœtus was found loose among the intestines, without any covering whatever. The symptoms were, sudden faintness, prostration of strength, hæmorrhage per vaginam, delirium, and vomiting of a coffee-coloured fluid, of which, a considerable quantity, exactly similar in appear-

ance, was found in the cavity of the abdomen, in the two cases which were examined.* In these cases, the enveloping membranes, as well as the peritoneum, gave way at the time the rupture happened. I am not acquainted with any instance in which, under these circumstances, the patient survived long.

In an extra uterine pregnancy, where the ovum has been deposited in the fallopian tube, it forms its adhesion by that common law, by which two living substances become united together, when placed in contact with each other; thus, the spur of a cock will grow in the comb, if it is properly secured there; and a piece of the comb cut off, if carefully introduced in the cavity of the abdomen, will form an adhesion with the part it happens to come in contact with. In a conception in the fallopian tube, therefore, the peritoneal covering can hardly ever be ruptured, for after the ovum is attached, it grows, and is nourished; and, in its progress, gradually distends this membrane, which is here a duplicate, forming the ligamentum latum of the uterus. In all such cases, the peritoneum must be the outer enveloping membrane.

In a remarkable case published in the 3rd vol. of the London Medical Observations and Enquiries, by the late celebrated Mr. Hay, of Leeds, the placenta was found in the cavity of the uterus, while the fœtus was extra uterine. The sac, here, had undergone considerable changes from inflammation, and was united to neighbouring parts. It was probably thickened peritoneum, altered in its structure by diseased action. This would seem to point out, that rupture had taken place of the uterus only; and that the accident happened at one of those periods in gestation, when the patient was attacked with those violent vomitings which were so difficult to relieve. The placenta being retained in the uterus, must have been from the contraction of that organ, in the same manner that not unfrequently happens in common labours. It is probable this is the true explanation of the case, from the circumstance that the uterus weighed, with its placenta, two pounds and a half, and which could not have been the case, had it not undergone that change which is produced by an ordinary pregnancy.

Vomiting of a porraceous nature, was the most distressing symptom; and it is mentioned that, about the ninth month, uterine hæmorrhage came on, attended with great pain, and succeeded by a serous discharge, which continued more or less for a month. In this case we may conclude that the fœtus had escaped by a rupture of the uterus, but had not passed through its peritoneal coat. It is only by this supposition, that we can comprehend the communication which existed between the sac containing the fœtus, and the cavity of the uterus, containing the placenta. "This inferior sac we found to be the uterus, containing a very thick placenta, having the naval string attached to its centre, which corresponded with the fundus of the uterus. The placenta

* Vide Johannis Steidale, Universitate Vindobensi Professoris.

filled up the greatest part of the aperture of communication between the sacs, and which was about four fingers' breadth."—Medical Observations and Enquiries, vol. iii. p. 353.

Having related two forms under which extra uterine fœtation has been observed, I shall now make a few remarks upon two cases; the first of which fell under my own observation, and the other is related by Mr. John Bard, of New York, and published by the late Dr. Fothergill, in vol. ii. p. 369, of the London Medical Observations and Enquiries.

In both these cases, an extra uterine fœtus existed, notwithstanding which, pregnancy again took place. These cases are very remarkable, and, as far as I am acquainted, are the only ones on record; though it is possible there may be others in the voluminous collections, particularly of foreign authors, which I have not had an opportunity of consulting.

In the case that fell under my own observation, the second pregnancy did not take place till after a period of five years; while in the other, it happened in five months, and the results in both were remarkably different.

It may be proper to remark in this place, that in all cases of extra uterine pregnancy, pains, very much resembling labour, take place at or about the period when gestation should be complete; and what is equally singular, although both probably depend upon some law of sympathy, with which we are not perfectly acquainted, the cavity of the uterus takes on that peculiar change, that happens in an ordinary pregnancy, in the formation of the deciduary membrane. This has been noticed by Dr. Wm. Hunter, and by Boehmerus in his Observationes Anatomicæ.

In the first case, the patient, a healthy young woman, and who had had two children before, became pregnant; and, at the usual period, pains, resembling labour, took place. But they wanted that forcing character, so familiar to those who have seen much practice. Upon examination, it appeared to me the child was contained in the cavity, and the uterus had undergone that change which an ordinary pregnancy produces. The pains continued three or four days, and at times were very severe, when they were succeeded by other symptoms, shewing that inflammation had commenced, with tenderness of the abdomen, and that a new condition of parts was coming on. Antiphlogistic remedies controlled these symptoms, and in about ten days, she had a discharge of a very fœtid and purulent character.

The progress from this time, for the next six months, was very various; but the discharge became so considerable, that hectic fever, great emaciation, with loss of strength, succeeded. A change for the better at length took place; the discharge diminished, her general health improved, and in about fifteen months, she had regained her flesh and strength. Her size also gradually diminished, though considerable enlargement still remained; and she was at length able to resume an active employment, which was that of keeping a grocer's shop.

At this period of the case, it may be right to pause, and enquire into the real nature of change which had taken place, as far as it had as yet gone. I had found the neck of the uterus obliterated, when labour was supposed to have come on, and could feel the child, as I believed, through its substance. There was no dilatation of the os tincæ, or any discharge which I thought worth notice. Her pains were violent, and extended into the abdomen, and were only mitigated by large doses of opium and fomentations. She had vomiting, but it was not a leading symptom.

I think it probable that, about this period, the child escaped with its placenta and membranes, by a rupture of the uterus, but not through its peritoneal coat; for I believe that in every case where the latter has really happened, death very soon has taken place. If this was the fact, and of which I am strongly persuaded, her life was saved, and her health restored, by that wonderful power of nature which we sometimes see successful in the most desperate cases, assisted by youth and a good constitution.

Between three and four years from the recovery of her health, menstruation became perfect, after occasional interruptions; and in about a year after this, she again became pregnant. She proceeded favourably, and at the usual period, was taken regularly in labour.

Upon examination, I found the upper part of the pelvis occupied by a hard round body, which I immediately took to be the head of the child, and from its position, expected a favourable termination. But after a more careful enquiry, I ascertained this to be a foreign substance, firmly attached to the base of the sacrum; and occupying the upper brim of the pelvis, in such a way, as to leave a space barely three inches between it and the symphisis of the pubis. Upon passing the fingers through this space anteriorly, and above the brim of the pelvis, I discovered the os tincæ partly dilated, and the foot of the child presenting. Feeling some embarrassment how to proceed, I requested a consultation, and was assisted by the experience of Dr. Cheston and Dr. Briggs. These gentlemen, as I had done before, mistook, at first, the tumour for the head of the child; but they were soon undeceived, and the question was, what was to be done? The cæsarean operation was mentioned, as the child was evidently alive; but it was determined to allow the labour to proceed, to make an attempt to bring the feet down, and by diminishing the size of the head, to endeavour to bring the child through the narrow space, between the tumour and the pubis. This, after much difficulty, was effected, and a full-grown child and the secundines, were delivered.

In a few days, extensive inflammation came on through the whole of the pelvis, which ended in suppuration, with immense discharges of fœtid matter, hectic fever, and great emaciation. The mischief still farther extending itself, communications were formed between the vagina, rectum, and bladder; and all her discharges came, as it were, from one large cavity. Death, at

length, put an end to her sufferings, but not before many of the bones of the first fœtus were discharged.

No entreaties could prevail upon the friends to have the body examined. This is to be regretted, as dissection would probably have thrown much light on this very singular case. The tumour in which the first fœtus was contained, was immoveably fixed to the base of the sacrum, and was so very hard, that little doubt could be entertained of the ossific process having taken place. It is probable that the alarming symptoms which came on after her delivery, might have arisen from some injury done to this substance, by the instruments necessarily made use of, although as much care was taken as it was possible, in a case of this nature.

The case before referred to, and communicated by Dr. Fothergill,* though similar in its nature, was very different in its progress and termination. In this, a healthy woman, having had one child, became again pregnant; and having proceeded not quite so favourably as in the former instance, was, at the usual period, attacked with pains resembling labour. These soon went off, and there remained a large moveable tumour, inclining a little to one side. The menses returning in five months, she again became pregnant, and at the usual time, after an easy labour, was delivered of a healthy child. In five days after, she was attacked with fever, and other alarming symptoms, which ended in local inflammation of the tumour, to which was applied fomentations, poultices, &c.; and at the end of nine weeks, a fluctuation of matter was discovered.

It was determined to make an opening into it, and the result was altogether so extraordinary, that I shall quote the words in which it is described. After a consultation with Dr. Huck, Mr. Bard proceeds; "I made an opening in the most prominent part of the tumour, about the middle of the right rectus muscle, beginning as high as the navel, and carrying it downwards. There issued a vast quantity of extremely fœtid matter, together with the third phalanx of a finger of a child. Introducing my finger into the abscess, I found an opening into the cavity of the abdomen, by the side of the rectus muscle, through which I felt the child's elbow. I then directed my incision obliquely downwards, to the right ilium, and extracted a fœtus of the ordinary size at the time of delivery. The frontal, parietal, and occipital bones, as also the third phalanges of the fingers of one hand, separated by putrefaction, remained behind, which I also took out. We imagined the placenta and funis umbilicalis, were dissolved into pus, of which there was a great quantity. By the use of fomentations, and detergent injections, while the discharge was copious, fœtid, and offensive, and by the application of proper bandages, and dressing with dry lint only, when the pus became laudable, the cavity contracted, filled up, and was cicatrized in ten weeks. The source of the hectic being removed, with the

* Medical Observations and Enquiries, vol. ii. p. 369.

help of bark, elix. vitriol, and a proper diet, she quickly recovered good health. Her milk, which had left her from the time she was first seized with the fever, returned in great plenty after the abscess was healed, and she now suckles a healthy infant."

After such an instance, we should never despair; and this is, perhaps, altogether, one of the most instructive examples upon record, of what the constitution is capable of effecting.

There is, however, an inaccuracy in the language of this narration. Mr. Bard states that he introduced his finger into the cavity of the abdomen. It is impossible the cavity of the tumour could have had any communication with the abdominal cavity. Its external envelope, as I believe is always the case in similar instances, was peritoneum. This membrane contains the fœtus and its appendages, in the same way in which the contents of an hernia are contained in its sac; with this difference, that the protrusion in one case has been inwardly, and in the other externally.

I have now noticed three varieties of extra uterine fœtation. In the first, the ovum is lodged in the fallopian tube, and which is by far the most common. The second is where it has reached the uterus, which at some period of gestation has given way, and the ovum has escaped: and the third, where the peritoneum has been involved in the accident, and the contents of the uterus are found in the abdominal cavity, which, I believe, always proves fatal, and almost immediately.

It remains to say something where the case is purely ventral, if such a one has ever happened, which I much doubt, except when it has become so by a rupture of the peritoneum, in the latter stages of pregnancy. When we consider that all the internal organs in the female, are external to this membrane, and that they have no communication whatever with the cavity of the abdomen, and at the same time reflect upon the readiness with which it becomes extended, when any distending cause is acting upon it, examples of which we have in the sacs of herniæ, in pregnancy, and dropsical accumulations, it is not so very surprising that in extra uterine cases it should form a barrier, by which the ovum is prevented escaping into its cavity.

When the ovum is lodged in the fallopian tube, the growth of it at first is so gradual, that this membrane will grow with its growth, and form an outer and tough covering for its protection; and even should it distend itself downwards, it must still be external to that cavity. But the resistance upwards is so much less considerable, that it will always take that direction; and when it is also considered that the peritoneum is reflected, so as to form a duplicature in which the tubes and ovaria are embraced, the chance of this happening is much diminished. There is, therefore, no way by which an ovum can get into the cavity of the abdomen, except by a rupture of the peritoneum; and which can never happen in the first instance, when its distending power is so inconsiderable.

If this reasoning is correct, a ventral conception can never take place; and the cases of this sort which are met with in collections, have arisen from not having attentively considered the anatomical distribution of parts involved in the mischief.

It is to be lamented that our remedial means, in cases of this sort, are of a very limited nature, and are confined to such assistance as we can afford, in those extraordinary efforts which, we have seen, have now and then been made by the powers of nature for her own relief. The history of this accident has shewn us, that inflammation, and the formation of abscess, have been the principal agents resorted to by the constitution, and with success in some rare instances. But it must be obvious that such efforts must, of themselves, in all cases, be attended with much danger, and are commonly followed by fatal effects. The first case I have described, illustrates fully this observation. Nor can much reliance be placed upon the cæsarean operation, which has been recommended, but which, from its nature, must necessarily be very uncertain, though not inevitably fatal. A case happened at New York, in which this operation was successfully performed by the late Dr. Chas. M'c Knight, twenty-two months after pregnancy had taken place. An incision was made on the left side, just above the navel, which was continued to the pubis. The sac was penetrated which contained the waters and the fœtus. The cheek and one arm were brought into view; the arm was taken out, but the child was not delivered without lessening the size of the head, when it was easily extracted. The navel string was broke, and, as well as the placenta and membranes, was left behind. The lips of the wound were brought together, and, after a good deal of sloughing and an ichorous discharge, the patient rallied and got well.*

It is obvious that, in this case, the cavity containing the fœtus, must have been distinct from the cavity of the abdomen. Had it been otherwise, it is impossible such extensive suppuration and sloughing could have happened, without fatal consequences.

I should apologise for occupying so much of your valuable Journal, but it appeared to me that, in most of the recorded cases of this kind, there was wanting an accuracy of description, especially as regards the share the peritoneum has in their formation, and which is quite necessary to a correct opinion of their real nature.

* Mem. of Med. Society, London, vol. iv

ARTICLE VII.

Tumour on the Lumbar Vertebræ.

BY MR. WALDRON, SURGEON, BATH.

About the middle of April, 1829, I was requested to see Master Peckover, a boy 12 years of age, whom I had attended two months before, in an attack of acute hepatitis; his complaint yielded to the usual means of general and local blood-letting, blisters, aperients, &c.; but the highly inflamed state of his blood, jaundiced hue of skin, morbid state of alvine evacuations, and tenderness in the region of the liver, bespoke the severity of his attack, and indicated, in a person at his early period of life, an unusual degree of disease in that viscus. I was now consulted in consequence of a swelling having made its appearance on the lower part of the spinal column, between the third and fourth lumbar vertebræ; it was about the size of a small hen's egg, but little sensible when examined by the touch, and accompanied with pain and uneasiness in the back and loins; it did not dilate upon coughing. At this period, the boy's general state of health was good: I at once suspected this to be a lumbar abscess, but not being decided in my opinion, I determined, at all events, to act with caution. I directed a calomel powder to be taken twice a week at bed time, and the following drops to be taken. ℞ Liq. calcis mur. ℥iss. Tinct. ferri mur. ℥ss. misce fiant guttæ. Capt. ♏ xxx. bis quotidie a calice vitreo aquæ. The following lotion to be applied to the swelling. ℞ Liq. ammon. acet. ℥iv. Liq. plumbi acet. ℥ij. Aq. distillat. ℥xij. misce ft. lotio constanter applicanda. This plan was continued, but not with the utmost regularity, till the 1st of September, when the father of the boy having, a few days previous, learnt from me, that I considered the swelling in question to be capable of removal by the knife, viz. that it was an encysted tumour; unknown to me, he took the boy to Mr. Hicks, of this town; this gentleman having expressed a wish to meet me on the case, we met, and, in his own words, I will give his views of the case. "He defined the tumour to be an impulse of matter, and prescribed blisters to produce absorption, with exhibition of internal remedies to improve the constitutional defect. At the time Mr. Hicks saw the boy, the tumour was three inches and a half long, and in width about three inches; the integuments were perfectly healthy and free from all discolouration; he suffered no pain, and his general health was good. The tumour was firmly attached to the fascia of the tendon covering the latissimus dorsi muscle. Mr. Hicks continued his plan till the 7th of November, when ulceration having taken place in the integuments, he pursued the following plan; Mr. Hickes did not follow up the efforts of nature, but selected the soundest part of the tumour, into which he thrust an abscess lancet, and evacuated its contents. He next directed

thin tea-chest lead to be applied, with a view, as he stated, to obliterate the remaining cavity, and produce adhesion. After making trial of this plan for nearly three weeks, without success, the boy was brought back to me, to be placed entirely under my care, and in the presence of Mr. Soden, Mr. Geo. Goldstone, and Mr. Ormond, I laid the tumour open to its full extent, and exposed a cyst, not merely of condensed cellular membrane, such as is found in chronic abscess, but thick and distinct, and capable of secreting its own fluid in very considerable quantity. It became necessary, after three weeks, to dilate a sinus which still remained, and kept up a discharge, and prevented the granulating and healing of the wound. This being done, and the wound dressed with warm digestive dressings, the whole of the cyst sloughed away the parts granulated, and are now, April 25, 1830, wholly healed.

Observations.—This case, which I have now briefly related, having caused some little conversation with regard to its treatment, I would observe that it is the opinion of the three respectable surgeons whom I consulted, when the boy was brought back to me, that the tumour in question was an encysted one, and ought to have been removed at an early period by the knife; any further comment on the nature and treatment of these swellings, would be quite superfluous, as the subject is fully treated of by surgical writers, and generally understood by every well informed surgeon. Mr. Hickes' plan of treatment is most assuredly novel, and as such I have stated it. To what extent it will be followed by my professional brethren, time will prove.

ARTICLE VIII.

A Case of STRANGULATED HERNIA.

BY MR. DAVIES, SURGEON, PERSHORE.

At nine o'clock on Tuesday night, November 24, 1829, I was requested to visit James Hurst, whom I found suffering with the symptoms of strangulated hernia; it came down on Monday morning at eight o'clock, while engaged in his usual labour as a tanner. He took some aperient medicine, and in the course of the day was bled to about half a pint. On Monday evening the pain became excruciating, continual sickness and excessive thirst. All the symptoms seemed to increase until Tuesday, about midday, when he felt rather better; he was bled on Tuesday morning to about the same quantity as on the preceding day; he also continued taking his aperient medicine, but without any relief. I found him free from pain; he had an inguinal hernia, right side, about the size of a pullet's egg, not half the size, as he informed me, it had been on the preceding day; the sickness still continued, though in a much less degree; hiccough troublesome;

pulse 90, soft; skin moist. He was immediately put in a warm bath, and bled to fainting in the bath, and the taxis assiduously applied. On his coming out of the bath, I applied snow to the tumour, and gave him a tobacco enema; he was exceedingly sick, and positively asserted he could distinctly taste the tobacco; it seemed to have taken its full effect upon him, but still I could make no impression on the hernia; it was nearly one o'clock on the 25th; I did not feel justified in proceeding farther without the advantage of another opinion. I called upon my friend, Mr. Woodward, who saw him with me; he was again put into the bath, and again bled; he had 24 leeches applied to the tumour, and on their coming off, ice was applied, and with no better effect. The operation was now performed; my friends, Mr. Woodward and Mr. Humphreys, were present. After dividing the stricture, I found some difficulty in endeavouring to return the intestine, in consequence of some very firm adhesions; I was not very anxious on that head, as I was by no means satisfied as to the extent of injury the bowel had sustained; it was of a dark chocolate colour, but I could not discover any sphacelated spots. As I had considerable doubts on the subject, I preferred allowing it to remain "in statu quo." The wound was dressed as usual; united with the interrupted suture and adhesive plaister. He was placed in bed with a pillow under his ham; he expressed himself much relieved. His bowels had not been relieved since the morning of the 22nd, and then but very slightly. He was now ordered effervescing medicine, with small doses of the sulphate of magnesia every four hours.

10, P. M.—All the symptoms relieved.

26th, 8, A. M.—Passed a very good night; slept well; no sickness; pulse 90; hiccough occasionally; tongue furred. Common enema. One good evacuation; no tenderness of the abdomen.

About 4, P. M.—the nurse saw a little discharge exude from underneath the dressings. I was immediately sent for, and removed the whole of the dressings. The discharge of feculent matter was very great. The aperture in the bowel was about an inch in extent; I was in great hopes of being able to establish an artificial anus. I think about six inches of the gut was strangulated.

10, P. M.—Very comfortable.—Not any thing to complain of but occasional hiccough. Pulse 90, full, soft; tongue still dry.

27th.—Going on very well; tongue moist. Allowed mutton broth, milk, &c. Pulse 90, full, soft. Vini rubri ℥ss. 4tis. horis.

28th.—Decidedly better. Pulse 86; tongue clean; skin moist. Bowels relieved per anum; is very cheerful. Takes quinine and wine.

29th.—Pulse 90; tongue clean; does not feel quite so well in himself, but still has not any thing to complain of; a free discharge from the artificial anus still continuing, on which a soft napkin was kept, to prevent, if possible, its escaping too soon.

I was obliged to go a long distance from home on urgent business, for a few days. Mr. Humphreys, my assistant, informs me that he began sinking on the evening I left, and in spite of brandy, ammonia, bark, wine, and all the nourishment he could take, he died Dec. 2, having lived one week after the operation. "This man lived a week after the operation, and then died from want of nutrition. It was the small intestine that burst, and the fœces escaped through the orifice, so there was no opportunity for such a degree of lacteal absorption as was necessary for the support of his constitution, and he died from irritation and inanition."—Sir A. P. Cooper.

ARTICLE IX.

Impaction of a Foreign Body in the Ear, producing Inflammation of the Brain, and terminating fatally.

BY MR INGLEBY,

Member of the Royal College of Surgeons; Surgeon to the Birmingham General Dispensary; Surgeon to the Magdalen Asylum; and Lecturer on Midwifery to the School of Medicine and Surgery, in Birmingham.

Master ——, four years and a half old, the son of a medical gentleman late of Birmingham, was observed by the nurse maid in the afternoon of Monday, 4th June, repeatedly thrusting his finger forcibly into his left ear, and on interrogating him, he replied that he had put something into his ear, but could not tell *when*, nor what it was. I saw him immediately upon this declaration, and attempted to extract the substance with various kinds of forceps, for about fifteen minutes, but without avail. I could distinctly feel a metallic body, lying, as I believed, upon the tympanum. Mr. Wood, on my failure, employed with very great care and gentleness, every expedient that he could devise, but ineffectually. The boy was then put to bed. Various local remedies were applied; fomentations, poultices, lint and warm oil, and the ear syringed with tepid water. A dose of calomel was also given, He was very restless during the night, and started frequently while asleep.

Tuesday, 10, A. M.—The boy appeared tolerably well and cheerful; the calomel had operated. The internal ear was somewhat swollen, and there was a considerable sero-sanguineous discharge from it. A mild aperient medicine was ordered, and the local applications continued. It was deemed expedient to make no farther attempt at extraction at this period.

6, P. M.—Same as in the morning.

Wednesday, 10, A. M.—The same as yesterday. At twelve o'clock he became sick, and vomited once; he refused food; he became thirsty, and general listlessness prevailed; the pulse remained good; his walk seemed unsteady. In the evening, his head dropped on his shoulders somewhat suddenly, and from

that time he lost all command over progression. The right side of his body seemed to be more particularly affected.

Thursday morning.—Dr. Male and Mr. Jukes were called in. The state of the patient was now very alarming. During the night he had entirely lost the power over the right side, and become very comatose. He now lay in a state of partial stupor, with the eyes half closed, and a cadaverous countenance. Pulse irregular and about 80. Discharge from the ear continues as before. Mr. Jukes attempted the removal of the body without success.

At noon he was attacked with violent convulsions of both sides. Mr. Hodgson being called in consultation at this period, attempted to extract the body, but unsuccessfully. Opium by the mouth and per anum was prescribed, and in the evening, a hot bath and purgative injection. Pulse very intermitting and irregular.

Friday, 5, A. M.—General and intense spasmodic action. A considerable quantity of purulent matter has been discharged, both by the nose and mouth, which continued oozing till 7, A. M. when he died.

I examined the body in the presence of Mr. Hodgson, Mr. Jukes, Mr. Freer, and others. On removing the calvarium and dura mater, the vessels generally were much injected, and the substance of the brain was studded with vascular points. There was considerable effusion between the membranes, and a deposit of yellow lymph at the base of the brain, similar to what is observed in hydrocephalus acutus. The plexus choroides were peculiarly turgid with blood. The external ear and integuments being divided and dissected back, the internal ear was removed, by taking away a triangular portion of bone. A piece of metal, having a shining silvery appearance, now presented itself to view. It could not, however, be extracted, although it was very moveable; for being below the ridge to which the membrana tympani is attached, the projection (processus auditorius,) presented an insuperable barrier to its removal. It appeared difficult to account for the presence of this body in such a situation. When extracted by a section, it proved to be a piece of lead, weighing ℈ij. portions similar to which were in use at a workshop in his father's yard, and the child was seen in the shop a week prior to the detection of the accident. The ossicula auditus were missing, except one which was found loose in the cavity of the tympanum. The membrana tympani was also destroyed, with the exception of a small ragged margin.

Observations.—The peculiar situation of the foreign body, and the impossibility of extracting it until a section of the internal ear was accomplished, accounted for our abortive attempts to extract it during life—moveable as it not only appeared, but was actually found to be on dissection. I am quite of opinion that the lead had been an entire week in the ear, and was only detected when the body first began to feel uneasiness. The suf-

ferings of this little patient appeared to be most intense. To the friends and attendants, the scene was truly distressing, one of the most heart-rending it has ever been my lot to witness.

ARTICLE X.

Surgical Cases occurring in the Hospital Practice of the late Mr. Averill, with Observations.

BY CHARLES W. TURNER,

Member of the Royal College of Surgeons, in London, &c.

Paralysis of the Bladder. Enlarged Prostate.

Thomas Hicks, æt. 81, was admitted a patient into the Cheltenham casualty hospital, April 5. The patient, who resided in the country, sent for Mr. Averill; on his arrival, he found him suffering the most excruciating pain from retention of urine. He had not passed any water for three days. A prostate catheter was introduced with considerable difficulty, and a large quantity of urine drawn off. The prostate gland was found to be much enlarged.

6th.—The patient was, to day, brought into the house, that he may be watched, and have his water regularly drawn off. The catheter was introduced twice a day, and there was some blood mixed with the urine. Ordered ℞ Sodæ subcarbonat. exsicc. Pulv. uvæ ursi a. ℥ss. M. ft. pulv. xij. Capiat j. ter in die.

7th.—Bowels very much bound. Enema commune statim.

9th.—There has been little difficulty in passing the catheter lately. He was directed to omit the powders, and take ℥i. of the following mixture three times a day. ℞ Spt. ætheris nitr. ℥i. Mist. camphoræ ℥vi. ss. Syrupi. ℥ss. M. ft. Mistura.

12th.—The mixture has produced no effect whatever upon the bladder; there was a good deal of spasm this evening, and the man was obliged to be placed in a warm bath, before the instrument could be introduced. Capiat træ. ferri muriatis ♏ xv. omni horâ ex cyatho vinos. aquæ.

25th.—The medicines hitherto prescribed have exerted no beneficial influence on the paralyzed bladder. To day Mr. Averill determined to give the strychnine a trial. ℞ strychninæ gr. i. Sacchari albi ℥ss. Aq. distillatæ ℥ij. M. et capiat ℥ij. bis in die.

30th.—Has continued to take the medicine regularly, and feels sometimes a desire to make water. Ordered to take the mixture three times a day.

May 3rd.—Yesterday and to-day he says he has felt a great desire to void his urine; the sensation comes almost to the end of the urethra, and then suddenly goes off. Contin. mist.

5th.—He voided altogether yesterday, about half a pint, ejected by convulsive jerks, in the quantity of about a table spoonful at

a time. To day he has voided as much as is generally drawn off by the catheter, in quantities of one, and sometimes two, table spoonsful at a time. Pergat.

7th.—He has quite emptied his bladder, without the assistance of the catheter. Contin.

10th.—Made an out-patient. He has, for these last three days past, discharged his urine without the assistance of the catheter. Contin. mist. bis in die.

14th.—He came to the hospital to day, and complained of swelling of one of his testicles, for which he was ordered leeches, a cold lotion, and mist. purgans.

The swelling of the testicle having subsided, he was directed to leave off every other medicine, except an occasional dose of the aperient mixture, and was discharged cured of the complaint for which he was admitted. He then returned into the country. This illness, however, gave such a shock to the poor old man's constitution, that he never regained his spirits or appetite, and we understood that he gradually sunk a short time after his dismissal from the hospital; but he was enabled to discharge the contents of his bladder up to the time of his death.

Observations.—I consider the above case very valuable, as it illustrates the action of strychnine so well on the muscular coat of the bladder; and, so far as I have observed, strychnine exerts a more beneficial influence in paralysis of the bladder, than paralysis of any other part of the body; and what strengthens me further in this assertion is, that the late Doctor Christie permitted me to use it in several cases of hemiplegia that were under his care, and I observed that the first effect produced by the strychnine, was to relieve the involuntary discharge of urine and fœces. I am aware that, after patients have been afflicted some time with paralysis, they frequently, if not always, recover the power of these parts; yet this requires some time at least, and as it is a symptom so uncomfortable both to the patients and his attendants, it becomes of some consideration to remove it as early as possible; for this purpose it is, I would recommend the early exhibition of strychnine; and when it is found to produce no further beneficial effects on the system, it may be easily laid aside. The effect I have observed produced, after giving it some time, in a case of hemiplegia, is, that the patient complains of a sort of prickling sensation, more particularly towards the ends of the fingers; this, after a short time, disappears, and the medicine would seem to have lost its effect.

As I am now on the subject of paralysis, I cannot help speaking of the excellent effects I have seen derived, (in this form of complaint,) by a combination of blue pill and aloes, together with the use of the mustard seed. Before strychnine was tried, it was the above medicines which I have always seen exert such a beneficial influence in the troublesome symptom before adverted to. It was the usual practice of the late Dr. Christie, for a great number of years, and he has more than once told me he had

every reason to speak well of it; indeed, I have seen it given in a great variety of cases, and certainly with a better result than for the most part follows the exhibition of any kind of medicine in this disease. One case under his care I particularly remember, which was a man of the name of Candle. This was one of the cases of hemiplegia I used the strychnine in, and after having discontinued its use for some time, recourse was had to the blue pill and aloes; five grains of each were given every night, and half an ounce of mustard seed twice a day; under the use of these medicines the man recovered his speech, and was able to articulate pretty distinctly; he also obtained the use of his arm.

Perhaps it may be considered that I have dwelt too long upon what may appear, and, indeed, what really is, a simple medicine; but any thing emanating from the late Dr. Christie, will, I am sure, be received by the profession with that attention which the talents of that most excellent physician so well merit.

Nævus Maternus.

Mary Lane, æt. twelve months, was received into the hospital March 27, with a nævus situated on the right side of the nose. At the time of birth, it was about the size of a pin's head, and of florid colour; it had not increased till within these last two months, since which time it has grown much larger, and now presents very much the form and appearance of a ripe cherry.

26th.—Mr. Averill passed a curved needle, with a double ligature, through the base of the tumour, and secured either half, by tying as tightly as possible. A piece of lint, dipped in cold water, was then applied, and fastened lightly by a bandage. The child took the breast immediately after the operation, and was lively the remainder of the day.

30th.—The tumour considerably reduced; a good deal of inflammation, extending towards the eye.

April 1st.—The ligatures were divided, and the nævus came off. It did not appear to be entirely destroyed, but by the occasional application of the potass. fusa, it was brought even with the surrounding surface, and healed.

I am induced to send you the foregoing case, because I consider it corroborative of Mr. Higginbottom's statement, contained in a number of the Medical Gazette for August. He has there related two cases, one of nævus, and the other Aneurism by anastamosis, treated by the kali purum, on the plan recommended by Mr. Wardrop. I have seen Mr. Averill use the ligature in two cases, similar to the one now related, and in each case he was eventually obliged to have recourse to the use of this caustic, as he found the ligatures insufficient for the complete destruction of the nævus; indeed, it is impossible to secure the whole base of the tumour by the ligatures. The application of the ligature has been known in more than one instance to have produced convulsions, and thus put the patient's life in great danger; it is therefore of importance to dispense with the ligature, and as the disease

may be cured from the commencement by the use of the kali purum; and even when the ligatures are employed, ultimately you are obliged to use this caustic; it appears preferable to adopt the plan recommended by Mr. Wardrop, and successfully pursued by Mr. Higginbottom.

Extensive Nævus Maternus.—Varicose Veins.

Anne Scarlett, æt. 23, had, at the time of her birth, a nævus, extending in detached portions on the outside of the limb, from the posterior surface of the crista of the ilium, to the foot, as far as the point of the little toe. This, as her mother told her, was occasioned by her having marked her, in consequence of her having longed for some elder-berries during the time of her pregnancy. This nævus has continued to grow with the growth of the patient, so that it now occupies the same relative situation as at the time of her birth. When she was about seven years of age, the veins of her leg first began to enlarge. At ten, or thereabouts, as she was walking in the garden, a vein in that portion of the nævus situated on the outer side of the knee, gave way; her shoe was soon filled with blood, of which she lost a considerable quantity, and fainted; this bleeding was arrested by the application of fur from a hat and pressure. From this time, the limb enlarged more rapidly, and every autumn scabs formed on different portions of the nævus, which ulcerated and bled considerably. This she attributed to elder-berries being ripe at that season of the year. At fourteen she had the first appearance of her menstrual discharge, which, generally speaking, has continued regularly always in quantity; rather profuse, and sometimes a week previous to the natural period. In this way she continued to go on, the limb gradually enlarging till the time of her marriage, which took place on the 2nd of June, 1827. From the time of her pregnancy, the size of the limb increased much more rapidly; and on the outer side of the middle of the thigh in the centre of the larger portion of the nævus, after considerable inflammation, an abscess formed, which, on ulcerating, discharged about a tea-cup full of pus, and a good deal of blood. She miscarried, after having gone about four months. Since her miscarriage, the size of the limb has somewhat diminished.

Nov. 17, 1828.—She was received into the casualty hospital under the care of Mr. Averill, and then in the state about to be described. Her general complexion is pale, that of a person who has lost a considerable quantity of blood. The extent of the nævus the same as already mentioned. The outer side, and part of the posterior surface of the thigh, from about the trochanter, being included in it. A considerable portion of this named surface is now in a state of granulated ulceration, which furnishes a considerable quantity of hæmorrhage every time the dressing is removed. In the nævus, near the ankle, is another ulcer, which occasionally bleeds. Mr. Averill said that the veins of the leg generally, are in a more varicose state away from the nævus,

than any he ever saw; this, however, was not the case of those on the inner side of the thigh, which appear healthy, as does the skin and cellular tissue, as far as can be judged by the touch. The circumference of the diseased thigh is about one inch and a half greater than the healthy one. The circumference of the calf of the leg, where the veins are very varicose, is about five inches and a half greater than that of the healthy limb; the diseased measuring sixteen inches. I should here observe, that the woman was of rather slender form, and a good deal *emaciated* from the disease. She suffered a great deal from pain in the limb; had sleepless nights; opiates afforded but little relief; opening medicine was sometimes required; had occasional discharge of blood from the hæmorrhoidal veins; and sometimes, when sick, threw up blood with the contents of the stomach. This, which will be seen from the above statement was considered a hopeless case, is an excellent illustration of what may be accomplished by attending to the general health of the patient, with judicious local remedies. The diurnal details of this case would be as tedious as uninstructive, therefore the few remarks I have to make will occupy but a small space.

Treatment.—A mixture, consisting of a light tonic in combination with the sulphate of magnesia and sedative solution of Battley, was prescribed; by this means the appetite was improved, a gentle action kept up on the bowels, and the irritability of the stomach somewhat diminished. However, a variety of remedies were tried, before any were found of service in relieving the vomiting, and after taking any medicine for a few days, it was obliged to be changed, as the stomach would not retain it. The tr. ferri muriatis failed in arresting the hemorrhage from the stomach. The medicine that relieved this symptom, was a mixture containing the nitrate of silver, which was ordered to be taken three times a day, together with a blister applied to the epigastric region. Blisters had been tried before, but failed in permanently relieving this distressing symptom, therefore the benefit is to be ascribed more particularly to the nitrate of silver.

Bandages were at first employed, but the pressure made was not sufficiently even, and frequently caused so much pain (although put on but moderately tight,) that they were obliged to be removed. Mr. Averill therefore ordered an elastic stocking and thigh-piece, from Schoolbred, of London, which was found to answer the purpose remarkably well; but I should state that the thigh-piece was not used till the ulcer was healed, which was effected principally by the nitrate of silver, together with simple dressings. The nitrate of silver possessed the two-fold property of lessening the hæmorrhage and subduing the irritable state of the sore. The diet of the patient consisted of light and easily digestible food, and on her leaving the hospital, which was on the 23rd of January, 1829, she looked remarkably well, and had gained a great deal of flesh. The thigh was reduced to the natural size of the other, and the leg very little larger, the veins

of which were also diminished much in size. She was particularly directed always to wear the elastic stocking and thigh piece, as the likeliest method of keeping the disease under, besides giving support to the varicose veins, and thus give them as fair a chance as possible to recover their natural size.

Remarks.—When this patient was admitted into the house, it was under the idea that amputation was necessary; for, from her emaciated condition; from the large ulcer in the nævus, by which a vast deal of blood was lost, and considerable constitutional irritation kept up; together with the general hæmorrhagic tendency of the patient; it was the opinion of all who saw her, that the disease must cause her death, and the propriety of removing the limb above the trochanter, or even at the hip joint, should it have been found requisite, was generally thought to be the only means of affording her a bare chance of recovery.

It will be proper to observe that the patient was some time under the care of a surgeon, but he found medicine of no avail.

ARTICLE XI.

Surgical Cases occurring in the Worcester Infirmary, and

REPORTED BY MR. COLE, HOUSE SURGEON.

Case I.—Strangulated Hernia, proving fatal.

Sept. 14, 1830.—John Hall, æt. 35; is a labourer, healthy in appearance and good stature. About six o'clock this morning was brought into the hospital, with very large strangulated scrotal hernia, very tense, and somewhat discoloured at the lower part. He said that it came down last evening, about five o'clock, whilst heaving a heavy ladder. Tumour very tender to the touch, as well as the whole of the abdomen. Pulse 100; has no vomiting, but slight hiccough; says that he has not vomited since the previous evening. Has had one evacuation since the descent of the rupture. Has had a rupture for some time, but has never worn a truss. A surgeon in the town saw him about 11 o'clock, six hours after the accident; he used the taxis for two hours without success.

10, A. M.—The operation was performed by Mr. Pierpoint. Pulse was 150 when brought to the table; countenance very pale. On cutting through the integuments, they were found to be gangrenous and very fœtid; an immense quantity of small intestines was found in the sac, the whole of which was of a very dark colour. The stricture was relieved, but it was impossible to return the intestines; it was therefore deemed proper to make an incision into the lower part of them, and to let out their contents. About $1\frac{1}{2}$ of grumous blood was pressed out. The portion of intestine that was cut, was secured, by passing a ligature through it, and the integuments were brought over. A great quantity of bloody fluid was found in the sac. Pulse very quick and

feeble. Brandy was administered in large quantities, but he sunk rapidly, and died about 2 o'clock, P. M. four hours after the operation, and twenty-one from the time of strangulation.

Sectio cadaveris.—Upon examination, the whole of the ilium was found to have been contained in the sac, and at the strictured portion, it seemed as if a ligature had been applied round it. The whole of the strictured intestines was in a gangrenous state. Peritoneum was highly inflamed, as well as the other parts of the intestine. Upon measuring the portion of intestine contained in the sac, it was found to be 4 yards and 2 inches.

Case II.—Fracture of the Malar Bone, with Concussion.

Sept. 5, 1830.—Samuel Munn, æt. 14, was admitted into the Worcester infirmary, under the care of Mr. Sheppard, with a wound situated over the left malar bone, at its point of union with the os frontis, accompanied with fracture and depression. Considerable swelling over the temples. The fracture extended into the orbit. Faintness, with considerable stupor; occasional shiverings; pulse feeble; pupils contract well; no head-ache. The mischief was caused by a man having thrown a stone hammer at him. He fell senseless immediately from the blow.

Leeches were applied to the affected side of the head; cathartics given; the wound brought together with adhesive plaister, and the parts kept wet. Under this treatment he became convalescent in less than a fortnight.

Case III.—Compound Fracture of the Leg.

July 12, 1830.—James Hartin, æt. 28; is a free liver, and works very hard; a stout muscular man. Came into the Worcester infirmary, under the care of Mr. Pierpoint, with compound fracture of both bones of the left leg, nearly at their centre; a sack of wool, a quarter of a ton in weight, having fallen upon his head from a height, and crushed his leg. Was brought here within half an hour after the accident, when there was considerable hæmorrhage from the wound, which was situated across the front of the tibia and its muscles. The superior end of the tibia protruded, but was soon brought into place by extension. Sufficient time had not elapsed for swelling to supervene. The edges of the wound were approximated with adhesive plaister, and some simple dressings and splints applied to the leg. He went on very well without any bad symptoms, and is now well.

Case IV.—Severe and fatal Gun-shot Wound of the Scalp.

August 18, 1830.—Samuel Crook, æt. 27; under the care of Mr. Sheppard. Severe gun-shot wound of the head, situated over the left orbitar process of the frontal bone, about one inch in breadth and two inches in length. He was drawing the charge from a gun when it unfortunately went off, and carried away a portion of the integuments and pericranium. The eye was a good deal swollen and inflamed. Leeches were applied round the

wound, and a poultice laid over afterwards. Wound went on well; the sloughs came away, and the wound was granulating, and looking healthy. These good symptoms continued for ten days, when they took a contrary turn. Was attacked with shivering, succeeded by heat and sweating; vomiting; tongue loaded, brown and dry; pain in head. Blood was freely abstracted from the head, and the patient purged with calomel and jalap. The wound suppurated; his symptoms became aggravated; paralysis of the right side; loss of sight of the right eye; tremors. On the 5th day from the change of symptoms, the trephine was applied over the denuded bone, and two circular pieces of bone taken out; fœtid pus flowed out, to the quantity of ℥ss. A portion of dura mater was discovered in a sloughy state. Immediately after the operation, he moved his right arm, and he seemed to breathe somewhat freer. Pulse small and very quick. He gradually sunk, and died at 11, P. M.

Examination of the body.—Upon removing the cranium, the whole of the left hemisphere was covered with pus, of which there was also a great quantity at the base, in the depression which the middle lobe of the cerebrum occupies. The pus extended down into the orbit. A portion of dura mater was found in a sloughy state, and adherent to the cerebrum, to the extent of a shilling. Left hemisphere of the cerebrum very much inflamed. No more fluid in the ventricles than natural.

Case v.—Phlegmonous Erysipelas of the Leg.

February 18th, 1830.—Thomas Rivers, æt. 39; under the care of Mr. Pierpoint. Was brought into the Worcester infirmary with phlegmonous erysipelas of the leg, accompanied with very extensive sloughing. Limb very much swollen. Complains of great thirst; bowels costive; tongue furred; pulse 76; countenance flushed and very much distressed; considerable fever; rest disturbed. Free and extensive incisions were made in the leg, and the limb rolled up in a barm poultice. Was put upon full diet. Hydr. subm. gr. v. and ol ricini ℥i. posteâ. Træ opii ♏x. hh. s. Haust effervescens 4tis horis s. træ opii ♏vi.

Leg became better in a few days; fever abated. Was ordered to take ℥ss. of Port wine every three hours, and to continue the effervescent draught without the laudanum.

He had occasional attacks of fever, accompanied with delirium; at which time leeches and blisters were applied, with cold applications. His leg became better; the sloughs came away, and healthy granulations appeared. He went on very well, and in April was discharged, cured, and since that time he has gained the entire use of his leg.

ARTICLE XII.

Quarterly Reports of the Worcester Dispensary.

JULY to DECEMBER, 1829.

BY ROBERT I. N. STREETEN, M. D., WORCESTER.

1829. *THIRD QUARTER. JULY to SEPTEMBER.*

	Canal.	Sev.	City.	Sub.	Coun.	Tot.
Amaurosis,			1			1
Bronchitis,			2			2
Cachexia,			1			1
Cancer,				1		1
Carditis, (Chronic,)			1			1
Cephalalgia,			1			1
Chlorosis,					1	1
Cholera,			1			1
Colic,			1			1
Diabetes,		1				1
Diarrhœa,		1	1			2
Diseased Joints,	1		1			2
Discased Spine,		1				1
Dyspepsia,	3	1	5	2		11
Enlarged Uterus,	1					1
Eruption,	1					1
Erysipelas,		1				1
Fever,	2	1	2	5		10
Hæmoptysis,	2					2
Hæmorrhoids,			1			1
Hepatitis,	1	1	2			4
Hysteria,	1					1
Icterus,				1		1
Leucorrhœa,		1				1
Mania,		1				1
Menorrhagia,			1			1
Midwifery case,		1				1
Nephralgia,			2			2
Ophthalmia,		2	1			3
Peritonitis,		1				1
Phthisis,	1	2		1		4
Pleuritis,					1	1
Rheumatism,	1	4	2			7
Sprain,*						1
Syphilis,	1					1
Ulcers,				1		1
Ulcer of Face, (Malignant,)				1		1
Total	15	19	26	12	2	75

Deaths, 3; two from phthisis, and one from hepatitis.

Re-admissions from last quarter, 17, three of which proved fatal, two from phthisis, and one from dropsy.

1829. *FOURTH QUARTER. OCTOBER to DECEMBER.*

Amaurosis,	1					1
Anasarca and Dropsy,	1	1				2
Bronchitis,	5	6	8			19
Burn,			1			1
Cancer Uteri,	1					1
Cephalalgia,			1			1
Chilblain,			1			1

* Residence not known.

	Canal.	Sev.	City.	Sub.	Coun.	Tot.
Chlorosis,	1					1
Cholera,			1			1
Contusions and Wounds,		2	1			3
Cynanche Tonsillaris,				1		1
Diarrhœa,		1				1
Diseased Joints,				1		1
Diseased Spine,				1		1
Dyspepsia,	6	1	1	2	2	12
Exostosis,			1			1
Fever,	4	3	3	1		11
Fistula Lachrymalis,			1			1
Gonorrhœa,				1		1
Hemiplegia,	1					1
Hepatitis,	1		1	2		4
Hysteria,				1		1
Inflamed Leg,	1					1
Lepra,			1			1
Meningitis,	1					1
Menorrhagia,	1		2			3
Obstipatio,		1				1
Ophthalmia,			1		1	2
Paralysis,			1			1
Peritonitis,		1	1			2
Phthisis,	4	1	1			6
Pleuritis,	2	1	1		1	5
Pneumonia,			1		1	2
Rheumatism,		1	1			2
Scrofula,			1			1
Syphilis,			1			1
Ulcer,			1		1	2
Ulcer of Fauces,				1		1
Unknown,*		1	1	1		3
Total,	30	20	34	12	9	102

Deaths, 7; three from bronchitis, two from dropsy, one from fever, and one from phthisis.

Re-admissions from last quarter, 12, of which one, a case of hepatitis, terminated fatally.

Fever.—The number of fever cases which occurred during the third and fourth quarters of the year 1829, was twenty-one, one of which ended fatally. Six of them occurred in the canal district, four along the banks of the Severn, five in the city, and six in the suburbs. Fifteen, or nearly three-fourths, of the sufferers were females; and thirteen of these were engaged in glove-sewing, or other sedentary occupations. The character of the fever, as was remarked in the last report, was materially different from that which has been usually prevalent of late years, and unhappily much more severe. The fatal case did not come under my observation, but some of those which occurred to me were very severe, the head being much affected, the delirium running high, and, in the later stages, a corresponding degree of collapse taking place.

The diseases of the head were few in number, those of the chest and abdomen were more numerous. There were forty-one cases in which the respiratory organs were affected, namely, twenty-one of bronchitis, two of pneumonia, six of pleurisy, ten of phthisis, and two of hæmoptysis.

* Name of the disease not entered in the register.

Bronchitis.—Of the cases of bronchitis, there were only two in the third quarter, while nineteen occurred in the last, chiefly in the month of December. Nine of the persons affected were males, twelve females, all of whom, as well as two of the males, were employed in sedentary occupations. Six of the cases occurred in the Severn district, five in the neighbourhood of the canal, and ten in the city. The three fatal cases happened during the severe weather at the close of the year. One of these was in an old man, aged 75, who had been a good deal exposed to the severity of the weather. He had been subject to a catarrhal affection during the winter months for several years past. In the present instance, he was attacked with colic pains, his bowels being in a constipated state; from this, under the usual means, he soon recovered, but inflammation of the bronchial membrane supervened and resisted every means employed to subdue it. His death was accelerated by drinking rum, from which it was found impossible to keep him. Another case occurred in a lace-weaver, aged 62, who had suffered from an acute attack of the same kind the preceding winter, from which he was recovered by early and active treatment. Unfortunately, during this second attack, he neglected to apply for assistance, till the period in which such treatment could be had recourse to, with any hope of success, was gone by, and he rapidly sunk under the disease. The third case was also in an old man, but I am unacquainted with the particulars of his case.

Phthisis.—The sufferers from tubercular consumption were ten in number, five of whom were males, and five females. Three of the cases were fatal. One, an incipient case, having all the characters of this disease, lost all the unpleasant symptoms, and was dismissed apparently free from the complaint.

It is, perhaps, worthy of notice, in connexion with the remarks made upon pneumonia and pleuritis in the last report, that five out of the six cases of pleurisy occurred in females.

Dyspepsia.—The cases of dyspepsia were twenty-three, nine of which, it will be observed, occurred in the canal district. Of those affected with this disease, nineteen were females, the males being only four; twelve were gloveresses; seven engaged in other sedentary employments; three in active occupations; the remaining one, a female, was chiefly engaged in domestic avocations.

Colic.—The case of colic occurred in a young man, a china-glazer, and was evidently owing to his occupation, lead being employed in the glazing liquid into which the china is dipped. The symptoms of this case were those of colica pictorum, severe twisting pain about the umbilicus, with a constipated state of the bowels. Cathartics and opiates, with a cessation from his work for a few days, soon restored him to health.

Cholera. Diarrhœa.—There were two cases of the former disease, and three of the latter. The cholera was not severe, but two of the cases of diarrhœa, partaking of the same febrile character, were attended with much heat of skin, quick pulse, flushed

face, head-ache, and a good deal of constitutional disturbance. The third case of diarrhœa occurred in an old man of worn-out constitution, who had before been a patient with diabetes, and only admitted of partial relief.

Hepatitis. Icterus.—The cases were nine altogether, one of icterus, and eight of hepatitis, some of which were conjoined with more or less of a jaundiced state. A very severe case of acute hepatitis, threatening to terminate in suppuration, occurred in a middle-aged man, a glove cutter, of free habits, who had, some months before, had jaundice. There was great pain, on pressure, in the right hypochondre, and a circumscribed hard rounded tumour, about the size of the fist, could be felt immediately below the cartilages of the ribs; and these symptoms were attended with considerable fever, a full, quick, firm pulse, white coated tongue, and anxious countenance. He was copiously bled, and a large number of leeches applied to the tumour repeatedly in the course of the first few days, with great relief; but the tumour did not subside entirely till he was brought under the influence of mercury.

Diabetes.—The subject of this disease was an old man, aged 71. About four months previous to his becoming a patient at the dispensary, he fell down, and severely bruised his back and loins. Some local applications were used with relief, and he continued in tolerable health for about two months. About this time, he first observed that his urine was increased in quantity, and had a sweetish smell; and he had then also slight pain of back occasionally. On admission he was free from pain of back; the urine, about eight pints of which were passed daily, was clear, light-coloured, of a heavy sweetish smell, and sweet to the taste; the bowels were open; the tongue clean and moist, somewhat florid and glistening; the appetite good, not voracious; the thirst considerable; the pulse natural. Eight leeches were ordered to the loins; a grain of opium to be taken every six hours, and animal diet. In the course of a week, the urine had decreased in quantity to four pints, became somewhat turbid, and deposited a sediment on standing; the smell also was more urinous. As he complained of pain across the lower part of the abdomen, eight leeches were ordered to the region of the bladder; the opiate was continued. Three days afterwards, the urine was reduced to two pints in the twenty-four hours, but the bowels having become disordered, and the tongue furred, a quarter of a grain of calomel was added to each dose of the opium. In less than a fortnight, he had no complaint but debility, the urine continuing at the rate of about two pints daily. The patient, however, was not restored to health; in a few months he again became a patient of the dispensary with diarrhœa, which, though sometimes checked by medicine, continued to recur at intervals, alternating with œdema of the feet; in short, his constitution was broken up. He was relieved for a time, but ultimately, I understand, became gradually weaker, and died some time in the spring of the present year.

ARTICLE XIII.

Experiments with Prussic (Hydrocyanic) Acid.

BY MR. GARRETT, SURGEON, HANLEY, STAFFORDSHIRE.

To the Editors of the Midland Medical Reporter.

Gentlemen,—The experiments of M. Chabert having excited a great deal of interest, and being so enveloped in mystery, myself, and a scientific friend, (a gentleman of chemical celebrity) were induced to institute a few experiments, for the purpose of discovering an antidote, if possible; how far we have succeeded, the following will shew. I shall not trouble you with a description of all the medicines tried ineffectually, as ammonia, æther, &c. but merely offer those which were successful; the knowledge of which may be essential when prescribing, not to exhibit the prussic acid medicinally, in conjunction with its antidote, as its medicinal virtues would of course be destroyed. We made our own prussic acid from the ferro-prussiate of potass, according to the formula of Dr. Ure; it was exceedingly powerful, and we had the advantage of giving it before its properties could become impaired by keeping, or otherwise.

Experiment 1st.—To a full-grown male cat, we administered one drop of hydrocyanic acid on the tongue, and in one minute he became violently agitated; I examined the pulsations of the heart, which were quick and intermitting; convulsions were induced, and the cat died in a remarkably short time. The object of this experiment was merely to ascertain the strength of the acid. On inspecting the viscera, I found a sanguineous extravasation on the brain, and the lungs highly inflamed. These were the only morbid appearances we discovered.

Experiment 2nd.—To a kitten six weeks old, I gave one drop of the prussic acid on the tongue. We instantly administered a saturated solution of tartarized potass; convulsions ensued, and the kitten was apparently dead. I continued exhibiting the solution; in five minutes she made an exertion, and manifested reanimation. We gave a drachm of a saturated solution of tartrate of soda in distilled water, at short intervals. In half an hour she walked about, though considerably debilitated, and in eleven hours the poison had lost its effect.

Experiment 3rd.—Into a scratch made on the back of a kitten, one drop of prussic acid was inserted. Violent convulsions ensued. A strong solution of the tartrates of potass and soda administered constantly, till the kitten recovered, and she is now living in perfect health.

Experiment 4th.—Another kitten received one drop in precisely the same way as the last, but received *no remedy*, consequently it expired in 90 seconds.

Experiment 5th.—Administered to a large dog about 6 years old, *eight drops* of prussic acid *in* the following solution. ℞

Potassæ tart. ʒi. Sodæ tart. ℈ij. Aquæ distillatæ f. ʒvi. misce, and it had not the least effect. In ten minutes gave *ten* drops of the acid in the above solution. In 80 seconds convulsions supervened; copious fœcal evacuations, micturition, and an intermitting pulse, were observed. Gave tinct. opii ♏xx. and forty grains of tartrate of soda; in three minutes afterwards he seemed quite well! having already taken *eighteen drops* of this powerful poison! I then inserted five drops of the acid into a slight incision made on the back. Great uneasiness and trembling followed, accompanied by vacant and wandering glances, and an incessant wandering of the eye-lids. In eight minutes, dropped eleven more drops into the wound, not omitting the frequent exhibition of the above alkaline solution per os. Vomiting came on, and he was again perfectly recovered! However, in the course of the evening, as we wished to examine the state of the viscera, we gave *three* drops only of the acid *alone*, and he died in less than two minutes! On examining the viscera, each pourtrayed the same appearances as were observed in the cat, and which were in fact manifested in all our experiments of poisoning with the prussic acid.

Experiment 6th.—We were requested by a friend to destroy a horse of his, that had fractured the off fore leg. We gave him nearly a drachm of the acid, and he expired instantaneously. The post mortem appearances bore testimony to our former observations. We have repeated the experiments frequently, and with sufficient success to convince us that the above solution is a *decisive and effectual remedy;* the dose being increased in proportion to the strength of the prussic acid, which I imagine varies in potency every time it is made. Where a dose of prussic acid is taken sufficient to destroy vitality, I fear the remedy would be of little avail, on account of the rapid operation of the poison. But should the prussic acid be prescribed with the antidote, the medicinal virtues will be destroyed or neutralized, consequently it is of the utmost importance to the physician to be aware of the incompatibility of the acid with the tartrates of soda and potass. It may be well to state, that the febrile diathesis which was induced, was soon and easily remedied by the common antiphlogistic treatment.

Perhaps a description of the process of preparing the hydrocyanic acid may not be uninteresting. We put into a glass retort, an ounce and a half of ferro-prussiate of potass, finely powdered, and four fluid ounces and a half of water, in which it at length dissolved; then added one fluid ounce of strong sulphuric acid; heat was evolved. A precipitate of a lead colour was instantly effected, and the liquid assumed two colours distinctly; a dark green liquid floated on the precipitate, and a yellow at the top. Applied an Argand lamp, and proceeded to distil over the acid, which was at first a little coloured, but subsequently colourless. The heat applied was little; the distillation was conducted very slowly, and the whole quantity distilled over was one ounce; the

first drachm we did not use, but the second, third, and fourth, were used for our experiments. During the distillation, the colours of the liquids were *transposed*, till the whole solution was of one uniform colour. There is great risk attending the operation, for only having inhaled a slight portion of the fumes, I was seized with vertigo, and a prickly sensation, which left me after I had been in the fresh air a short time. Should you deem the above worthy of insertion in your publication, you will greatly oblige,

Gentlemen,

Your's most obediently,

C. B. GARRETT.

Hanley, Staffordshire Potteries.

ARTICLE XIV.

Further Experiments with the Prussic Acid.

BY C. HASTINGS, M. D.

Considering the results of the foregoing experiments to be very interesting, I was induced to try how far, by a repetition of the experiments, I might arrive at similar conclusions. I procured some prussic acid, as prepared according to Scheele's formula, by Messrs. Allen & Co.

Into eight ounces of the solution of tartrate of potash and soda, made according to the formula of Mr. Garrett, six drops of prussic acid were mixed. To a young cat, nearly full grown, the pupils of the infirmary, in the presence of Dr. Malden and myself, gave two ounces of this mixture. In a minute the animal became convulsed and insensible, and died in thirty minutes after the exhibition of the acid. In this case, therefore, one drop and a half of this powerful acid proved fatal, although given in combination with the alkaline tartrates, as recommended in Mr. Garrett's paper.

We only tried this experiment in another instance. In that, about two drops of the prussic acid, likewise given in combination with the alkaline tartrates, killed the animal in about twenty minutes.

In both, therefore, of the instances in which the experiment was tried by us, the alkaline salt did not succeed in destroying the poisonous agency of prussic acid, although it evidently modified its action. My experiments, therefore, on the effects of these alkaline salts, as an antidote for prussic acid, do not warrant me in drawing so decided a conclusion as Mr. Garrett does, and I am anxious to ascertain whether a difference in the strength of the prussic acid is the cause of this variation in the results of the experiments? If so, it shews how readily we may be deceived in the use of this agent as a medicine.

ARTICLE XV.

Fatal effects of Castor Oil in the Horse.

On the evening of the 22nd of February, I was requested to see a mare, rising 4 years old, which was said to have taken cold. Upon seeing her, I discovered a good deal of inflammation about the larynx. She had been bled twice prior to my visit, and a considerable quantity of castor oil given; in the whole, (as the dose had been repeated,) nearly or quite a quart bottle. I found the pulse about 55, but soft and feeble. She had a discharge of muco-purulent matter from the nostrils, considerable difficulty in deglutition, and a cough; still, the case seemed likely to terminate favourably, and appeared to require little else than some laxative medicine and soft diet, to effect a cure. I directed that a blister be applied to the throat, bran mashes be given for diet, and the skin kept warm by clothing; and, as the effect of the oil was somewhat uncertain, and the strength of the pulse sufficiently reduced by the bleedings, nothing more was done.

On the morning of the 23rd, the oil operated rather violently, but all seemed to be going on tolerably well until the evening, when abdominal pain became very evident, and the breathing much quickened. Indeed, inflammation of the bowels was now too obvious to be mistaken, and I was again sent for to see my patient, but, before I arrived, she was dead. It then remained for me to shew the real cause of the animal's death, or expose myself to the charge of gross ignorance and inattention. I gave a very positive opinion, (previous to commencing post-mortem examination,) that the oil had occasioned the mischief, and when I have detailed the appearances which presented themselves on dissection, the reader will draw his own conclusion, and judge for himself how far such an opinion was borne out by actual fact.

Sectio cadaveris.—Upon making an incision in the direction of the linea alba, and afterwards dividing the muscular parietes of the abdomen transversely, I obtained a full view of the bowels *in situ*. I immediately discovered an enlargement in the small bowels, (in the jejunum,) about 5 or 6 inches in length, which, at first sight, appeared as though the coats of the gut were much thickened and enlarged. On accurate examination, however, it proved to be introsusception, and that, too, to a very considerable extent. I drew the gut into its natural position, and found the part contained in the enlargement was nearly two yards long. I slit the intestine open, to examine the mucous membrane, which was inflamed to a very great degree. The peritoneum shewed no traces of inflammation. I then examined the large bowels, and found the mucous coat much inflamed throughout. The coat of the stomach was intensely inflamed; it appeared thicker than natural, and was easily separated from the muscular. The liver, spleen, and other abdominal viscera, were healthy. The contents of the thorax bore no marks of inflammatory action. I

afterwards examined the larynx, and discovered a good deal of inflammation in it, as also in the trachea.

Observations.—I do not remember ever to have seen the mucous surface of the alimentary canal, of any horse, so much and so generally inflamed as in this instance. The bowels having acted freely after the oil was given, clearly shews that the introsusception did not exist prior to the exhibition of it. The increased peristaltic motion, necessarily attendant on such an excited state of the mucous membrane, appears, unquestionably, to have been the cause of the entanglement; and it seems equally clear that the poor animal's death was attributable to extreme nervous irritation, occasioned by the action of the oil on the bowels.

GEO. CORBETT, V. S.

ARTICLE XVI.

A Summary of METEOROLOGICAL OBSERVATIONS, *at Hanley Green, three Miles east of Malvern Wells, and at Malvern Wells, for the Months of January, February, March, April, May, and June,* 1830, *at* 8 *a. m. and* 2 *p. m.*

BY JAMES LEWIS, SURGEON.

January.—The mean of the barometer, from the 1st to the 18th, was 29.10; afterwards it fell to 28.35 until the 22nd, when it again rose to 29.50, at which it continued, with little variation, for the remainder of the month. The mean of the thermometer, from the 1st to the 18th, was 33°, when it fell to 22°, being ten degrees below the freezing point of Farhenheit; on the 20th, 28°, and rising on the 21st to 34°; the mean for the remainder, 36°. At Malvern Wells, the lowest point was 28°. The wind principally from the N. N. W. and N. E.; the weather, throughout, occasionally snowy.

February commenced with light falls of snow; many days were extremely dull and humid, snow and rain alternately falling. The barometer varied, during most of this month, from 29.50 to 28.80. The mean of the thermometer, from the 1st to the 8th, 30°; from that time to the 22nd, 36°; on the 23rd it rose to 46°, remaining near that altitude until the end of the month; the wind being mostly S. W., occasionally N. W. and frequently very high.

March.—The mean of the barometer, for the first eight days, was 29.35; from that time to the 25th, 29.40; afterwards rising to 29.80, and on the last day of the month falling to 29.20. The mean of the thermometer, from the 1st to the 11th, was 50°, afterwards rising to 60°; and for the remainder of the month the mean was 55°. The prevailing winds N. and N. E., occasionally S. W., and generally very high, and also cold with little rain, and a considerable number of fair days; at the commencement of the month the mornings were generally ushered in by sharp frosts.

April.—The mean of the barometer, to the 9th, was 29.40, when it fell to 28,20, and on the 14th again rose to 29,50; and the mean for the remainder of the month, 29,25. The mean of the thermometer to the 8th, was 40°, when it rose to 52°, and continued near that until the 27th, when the mean was 60° to the end of the month. The winds alternately N. N. W. and S. S. W. during the whole period. Snow fell on the first three days of the month, and very frequent showers occasionally, accompanied with thunder until the 25th, when it continued fair to the end.

May.—The barometer continued to maintain its altitude of 29,25 until the 7th, when it fell to 28,90, and continued near that point until the 17th, when the mean to the end was 29,20. The mean of the thermometer for the whole of the month was 55°, occasionally reaching 60°. The wind generally S. S. W. and S. S. E., and occasionally W. N. W. until the end, when we had a few days of N. and N. W. winds. A few fine days occurred at the beginning and middle of this month; all the rest with flying showers, frequently much rain, and occasionally thunder.

June.—For the first three days, the barometer continued at 29,40; from that time to the 20th, the mean was 28,20, and to the end 29,15. The thermometer continued with very little variation at about 60° until the 26th, when it rose to 70°, and continued so until the end of the month. The prevailing winds N. N. W. and occasionally W. S. W. but not very frequent. There were not many fine days in this month, more frequently cloudy, accompanied with rain, and occasionally thunder.

ARTICLE XVII.

PAROCHIAL RETURNS of Births, Marriages, and Burials, that have been registered in the several parishes of the City and Suburbs of Worcester, including those of the several congregations who dissent from the Established Church, between the 1st of April and the 1st of July, 1830.

Births, 225; Marriages, 79; Burials, 148.

Between the 1st of July and the 1st of October, 1830.

Births, 238; Marriages, 97; Burials, 148.

NOTICES AND ACKNOWLEDGEMENTS.

Books and Reviews received.

The American Journal of the Medical Sciences.

The London Medical and Surgical Journal.

The London Medical Gazette.

Murray on Consumption.

We are compelled to postpone several important articles till the next No.

The Eleventh No. will be published on the 1st of February, and the succeeding Numbers Quarterly.

All Letters and Communications, addressed, free of expense, (under cover,) to the Editors, at the office of the Worcester Journal, will receive immediate attention.

THE MIDLAND

Medical & Surgical Reporter,

AND

TOPOGRAPHICAL AND STATISTICAL JOURNAL.

HOMO, NATURÆ MINISTER ET INTERPRES, TANTUM FACIT ET INTELLIGIT, QUANTUM, DE NATURÆ ORDINE, RE VEL MENTE OBSERVAVERIT; NEC AMPLIUS SCIT, AUT POTEST.—BACON, NOVUM ORGANUM.

No. XI. FEBRUARY, 1831.

On the Rules and Regulations of English Hospitals.

BY J. K. WALKER, M. D., HUDDERSFIELD.

IN a preceding paper, I brought to a conclusion the history of the various hospitals which the charity of our country had already erected for the relief of the sick poor. Of two others about to be constructed, (the Huddersfield and Carlisle,) it was only in my power, from a want of documents, to lay before your readers a plan of the first. Of the second of these, by the kindness of Dr. Barnes, I am now enabled to submit a circumstantial account; and, as the plan now adopted, was not chosen without long and careful examination, it cannot be doubted that, in the selection of it, due regard was had to all the circumstances of the case. In the centre of the principal front, is a tetra-style portico of the Doric order, after the Choragic monument of Thrasyllus and Thrisycles, of Athens, modified to meet the expenditure. A bold flight of steps leads to the principal entrance. The ends of the front are formed into wings by projections in antes. In the centre of the rear elevation is an open portico, for the shelter of the out-patients visiting the dispensary, and also communicating with the matron's apartments; the principal staircase and steps leading to the basement story. The principal and end fronts are to be built with chalk stone, rubbed or polished; and the building is so contrived, that future wings may be erected at a moderate expense, and without interfering with its uniformity; the ends of the present building forming one wing of the side elevation to be built hereafter.

The principal entrance leads to the vestibule, which is open to the hall and staircase; these parts being most seen by the friends

and visitors to the institution, will be finished in a superior manner to the rest of the building; but nothing is intended to be expended beyond what a most rigid economy will justify. From the vestibule are doors into the committee room, and into the physicians' rooms. In the hall is the principal staircase, having a bold flight of steps in the centre, up to the first landing, with a return flight on each side. From the hall are doors leading to the passages below, and to the corridors on the chamber floor.

The basement floor is divided into departments; the first is built fire-proof, for the drugs, the laboratory, and a vault for the dead, until removed by the friends of the deceased; this department has a separate exterior and interior flight of steps. In the other department, which has also a separate exterior and interior flight of steps, are the kitchen, scullery, wash-house, laundry, and a hot air stove for drying the clothes in unfavourable weather, with various other rooms required for domestic purposes.*

On the left of the vestibule entering the building, on the ground floor, are the physicians', surgeons', and apothecaries', sitting and bed-rooms; a shop, communicating with the out-patients' waiting-room by a sliding door, and two wards for male patients. On the right of the vestibule are the committee-room, the matron's sitting, bed, and store rooms, and other wards for female patients.

In each half of the building are back staircases to the chamber floor, with a water closet under the landing of each flight.

In the centre of the building, on the chamber story, is the operation room, over the vestibule, having side and top lights. One half of the building, from the operation room, is intended for the reception of female, and the other half for male patients. To each half is attached a nurse's room, with bed room over, and also a nurse's scullery, and two water closets. The building, therefore, will contain accommodations for 52 beds, and in cases of emergency, several more might be introduced. All the wards are to warmed by open fires, with tubes arranged in each to ensure a most effective ventilation.

The principal, or ground floor, is raised considerably above the surface of the ground, and the front and ends of the building, above the plinth, are rusticated to the spring course, under the high range of windows. It is proper to observe that, in case of any future enlargement, the expense of beds will be considerably less than the cost of beds under the present erection, as all the requisites for an establishment of this kind, more than double the present size, are provided in the building now commenced.

Having now conducted the reader through the splendid series of English hospitals, little more now remains, than to give some account of the rules and regulations enacted for the government of these institutions. What I have hithérto described, falls more

* As the railway will pass near to it, patients from distant parts of the country may be conveyed with ease and expedition.

within the province of the architect, and has regard to structural arrangement, mode of warming, ventilation, &c. The present paper embraces a still more important class of subjects, the appropriation of these edifices to their legitimate end, the production of the greatest quantum of good to the sick poor; and little will the work of the most skilful architect avail, if such wholesome rules are not formed, as may answer the just expectations of the subscribers, in this respect; and after all the care taken in framing a code of laws, they cannot reach every case. But the zeal and good sense of the medical and other officers of the institution, will enable them to supply any deficiency. It will be seen by a reference to the preceding papers, that at the time the older institutions were formed, that grand improvement of medical charity, the relief of the sick poor at their own houses, was unknown, and many were admitted within the walls of our infirmaries, that might and ought to have been relieved, quite as effectually, and at *a tithe of the expense, at home.* In most of our more modern hospitals, this capital defect is remedied, and provision is made for a dispensary department, by which many cases are relieved at home, who would otherwise have been a heavy expense to the institution. There are many, indeed, now that they are secure of medical attendance at home, that greatly prefer their own houses to the wards of an hospital, where they are attended by strangers. It is of the last importance, therefore, to admit none as in-patients, that can be equally well relieved at home. Unfortunately, the number of legitimate objects of admission, as in-patients, is always large enough, and often too large for the size of our largest hospitals. In such instances, the system of home treatment is a most important relief. Certain reasons may exist to make it desirable to establish an independent institution, where an infirmary is already established, especially where the accommodation is not very complete, but, as a general rule, an union of the two seems preferable. By this means, all difference of opinion, as to the relative merits of the two, is prevented, and the funds of these respective charities, inadequate, perhaps, to bear the burden of a double establishment, would be fully equal to support an united institution. Such an union is attended with still more salutary effects, if the infirmary department has the advantage of separate fever wards. It is well known that contagious fevers usually originate among the poor, and, through their negligence, or perhaps want of means to call in proper assistance, are permitted to spread, and be communicated to all ranks of society. But, by the above arrangements, no sooner does any contagious disorder appear, than its progress is immediately arrested by the vigilance of the medical officers, who, in their periodical visits, give the requisite directions for the removal of such cases to the fever wards, and for the ventilation and whitewashing of their houses. Another great advantage of the dispensary system, is the relief extended to young children, who are seldom sent to hospitals, *although a large proportion of*

them die before the age of two years. Other arguments might be adduced, tending to shew the expediency of the system I am now advocating, and, as the additional trouble to the medical officers, or expense to the institution, is so small, it is hoped that all districts that are capable of supporting an infirmary, will hereafter adopt this system. The same code of rules and regulations applies to both, with a few additional privileges to out and home-patients. In all such institutions, whether single or combined, the government is usually vested in the hands of a president, vice-presidents, and governors, and sometimes a body of patrons. I am not aware that there is any thing in the mode in which these officers are usually elected, that can be materially altered for the better. The rules of most institutions, indeed, elect the vice-presidents from the body of the principal subscribers. To this, however, some exceptions are to be found; and it has been deemed preferable, in these instances, to constitute an annual subscription of 5 guineas or upwards, or a donation of 50 guineas in one or two payments, as a sufficient qualification for a vice-president. The rules of the new infirmary at Stamford have such a clause. It has also been thought expedient, instead of electing the president for life, in some cases, to make it an annual office, and elect by rotation from the body of the vice-presidents. It is quite manifest that the policy or impolicy of deviation of this kind, must depend upon local circumstances, and that measure is always the best, that is most likely to ensure the greatest share of patronage, and, at the same time, sustain the credit and increase the usefulness of an institution.

With regard to the number of physicians and surgeons necessary to conduct the business of an infirmary, it seems to be conceded by the most competent judges, that the interest of hospital patients is best consulted by having no more medical attendants than are sufficient for the care of the complaints. Every supernumerary officer, by dividing, lessens the responsibility of the rest. In county infirmaries, too many medical officers are frequently appointed, from which cause, the business becomes so much divided, as to afford a very limited field of experience. This applies peculiarly to the operative part of surgery, where dexterity, expertness, and skill, are only to be acquired by almost constant practice. Dr. Clarke, who has expressed himself very decidedly upon this subject, considers that, in an infirmary capable of accommodating at one time, as many as 150 in-patients, two ordinary physicians and two surgeons, are enough to transact the business; but he recommends, where the number of beds is to considerable, the appointment of a similar number of assistant medical officers. It will be seen by a reference to the tables below, that the proportion of beds to each medical officer, is much greater in our metropolitan, than in our provincial institutions. The Manchester infirmary is, perhaps, the only hospital known, which has six physicians and six surgeons; but in that instance, *four charitable institutions of a distinct character, are united;*

viz. an infirmary, a dispensary, a lunatic hospital and asylum, and a house of recovery, besides an institution for vaccination, and for attending lying-in women at their own houses; to all which the same medical officers are attached. The twelve officers of the Manchester infirmary have the superintendence of about 18,000 patients. The following table will shew the proportion of beds to medical officers, in some of our principal provincial infirmaries.

Names of Hospitals.	*Physicians.*	*Surgeons.*	*No. of beds in each.*	*Average No. of beds to each Medical Officer.*
York, ...	2	2	70	17
Hull, ...	3	3	66	11
Leeds,...	3	3	120	20
Worcester, ...	3	3	100	16
Lincoln, ...	2	4	55	9
Liverpool, ...	3	3	220	36
Birmingham, ...	4	4	170	22
Norfolk, ...	3	3	110	18
Sheffield, ...	3	3	110	18
Stafford, ...	2	3	80	16
Hereford, ...	2	2	50	12
Chester, ...	2	2	100	25
Bedford, ...	1	2	52	17
Leicester, ...	2	2	72	18
West Sussex infirmary and dispensary, ...	2	4	—	—
Manchester infirmary and dispensary, ...	6	6	180	15

In metropolitan hospitals, the following is nearly the proportion of medical officers to the number of beds.

	Med. Officers.		*Beds.*
Westminster, ...	1	to	20
Middlesex, ...	1	to	33
St. George's, ...	1	to	28
London, ...	1	to	23
Guy's, ...	1	to	50
St. Thomas's, ...	1	to	70
St. Bartholomew, ...	1	to	55

In some of these, (the London and St. Thomas', for instance,) assistant surgeons, as well as physicians, have been appointed, some of whom fill the office of lecturers and teachers in the medical schools. In Guy's hospital, the number of patients in one year, is above 20,000, and of medical officers, 8, including assistants, making a proportion of 2,500 to each medical officer. Where the number of surgeons exceeds that of the physicians, it will be found that it has arisen from some local peculiarity, often in districts where accidents are most frequent. While on the subject of medical officers, I beg to observe that it is of the last importance that infirmaries should be rendered as accessible as possible to young men, educating for the profession, and that every liberality should be shewn to those who seek for improvement. To allow the apprentice of every surgeon in the place,

during the last two years of his indenture, on paying three guineas annually to the charity, to receive a ticket, giving him the privilege to see the surgical operations, and to attend the physicians and surgeons at the hours of visiting patients, would produce a two-fold benefit. It would add to the funds of the charity, and what is of no less consequence, materially tend to the improvement of the future guardians of the public health. I am aware that it has been objected, that such a proposal would encroach on the prerogative of the professional men, especially the surgeons, who give their gratuitous attendance to the hospital. But the pupils of surgeons would still have the superior advantages of being dressers, and a field of experience is opened to medical officers, which, to say nothing of higher motives, affords, in most instances, its well-earned rewards in the increased confidence of the public.*

Second only in importance to the medical officers, is the office of house surgeon or apothecary, whose function it is to see the orders of the medical officers carried into effect; to take notice of any change of symptoms in the patients; and, in cases of emergency, to exercise his own discretion in the treatment. Every one conversant with hospital practice, knows of how much importance it is to the welfare of such an institution, that an office, fraught with so much responsibility, should not be vested in improper hands, which would, indeed, be an ominous step for its future fortune. Where a majority of the subscribers decides the election, it is well known that interest, superior connections, if not more unworthy means, are too frequently resorted to, where success is doubtful. How often has it been the case in such instances, that the most meritorious has been the unsuccessful candidate? The trustees of those charities who have transferred the power of election to the medical officers, have taken the most effectual step to abolish this evil. If, however, it is deemed a point of importance, not to forfeit the advantages to be derived from a public appeal to the suffrages of the governors, it will be obvious to all that, as a check upon the abuse of this privilege, no candidate should be deemed eligible, *who has not a certificate to that effect, signed by the medical officers.* In some institutions, however, this power is vested in the quarterly boards.†

* It has been usual not to allow the presence of any extra-official person during an operation, without the permission of the operator, as, in some instances, it might serve to embarrass the operator. Cases of this sort may occur, but, as a general rule, would it not be a more liberal policy to invite, in rotation, one or more surgeons of the town, who do not belong to the institution, to attend each operation? An hospital is allowed to be the best school of surgery; it is desirable to embrace every proper opportunity of extending its benefits in cases of operation, to respectable practitioners, especially if they *are subscribers.*

† In the smaller institutions, where the funds are less, and the number of in-patients few, the office of apothecary and secretary are usually combined, as at Bedford, Stamford, and, I believe, Stafford and Colchester. Where, however,

It has sometimes happened that, after a long series of years, the person holding the office of house surgeon or matron, has been compelled, by age or infirmity, to relinquish the trust. Where such office has been well performed, it would savour more of parsimony than of policy, to withhold some small stipendaiary allowance. Nothing is more likely to prove a higher incentive, or more likely to attach competent officers to the institution, than the assurance that, at the termination of their useful career, they will not be left desolate. It seems but just, that those who have devoted their lives to the relief of others, should experience, in the decline of life, something of that charity which they have been the instruments of imparting to the sick poor committed to their care; of course, in all these instances, the degree of merit and urgency of the case, must be taken into the account, and the tendency to abuse of a privilege of this sort, carefully guarded against.

I will take the liberty, also, of mentioning, in this place, another not less salutary, and quite as just, a regulation, which respects the medical officers, who have dedicated the best portion of their lives to the services of the sick poor confided to their care. The principle I am espousing is this, that all such medical officers as shall have remained in office 20 years or upwards, shall become *entitled to rank as physicians or surgeons extraordinary.** Of what other profession can it be said, that they have given their unrequited services for so long a period, in furtherance of the cause of humanity? Few, indeed, I am persuaded, are the instances, where professional gentlemen have toiled for such a period, and not fairly earned this mark of distinction. Few, who have given their best days to an institution, that do not feel a deep-rooted attachment to its interest for the remainder of their lives. When age and infirmity incapacitate such an one, he still finds it difficult to sever himself from all connection with its affairs. He leaves his place, indeed, to be occupied by a more active successor, but his affections still linger there. But by adopting the principle above alluded to, you will, in *most instances*, be discharging no more than a debt of gratitude, with-

there are home-patients to visit, it is necessary to have either an assistant apothecary, (or an apprentice in the latter part of his time,) to remain with the in-patients, in the absence of the house apothecary. This may, for a few years, supersede the expense of a secretary, until the business so far increases, as to occupy the time of the apothecary.

* In the rules of all the infirmaries I have examined, it appears that the physicians and surgeons are governors, so long as they respectively retain their offices, and have the same privileges as annual subscribers of 2 guineas, exclusive of those which they may possess as benefactors or subscribers to the charity. The Lincoln infirmary, in their 40th rule, state that benefactors of £100, or annual subscribers of 10 guineas, and the physicians and surgeons, shall have the power of recommending any number of patients; leaving it, of course, to the good sense of the medical officers, not to abuse this privilege.

out any injury to the institution. You secure the services, in cases of emergency, of an experienced counsellor, and hold out an honourable boon to those who follow him in his benevolent career. I am speaking more especially of those who can feel that there are other motives, besides the mere elevation to professional eminence, that may actuate a medical man to offer his services in behalf of the sick poor. To others, who quit these sanctuaries of humanity, as soon as they have, through their means, attained the goal of their wishes, I can only say, they have their reward.

It would be inexcusable in this place, not to remind such of my readers, whose office it is to minister medical aid within the walls of our hospitals, that an æra is now arrived, when it is not only necessary that they should perform their part well, but furnish periodical reports of their practice. The practice of publishing reports on the Continent, as well as in America, has been attended with the best effects. To these reports, the profession is deeply indebted for the communication of many valuable facts, and let us hope the day is not far distant, when something of the same spirit will be shown in this country, that our hospitals may be made sanctuaries of science as well as sorrow. A repository of British hospital cases, has long been a "hiatus valdè deflendus," in the medical literature of our country. Let each, then, pour his mite into the treasury, and surely, from the united medical talents of our country, it is not too much to expect an assemblage of such well-authenticated facts, as may advance the progress of our art, serve as a reference and guide to future practitioners, and redound to the honour of the country. In a population so diversified as ours, where the employments of the working classes are so various, and so influential in the production and modification of disease; it is of the last importance to trace these changes, with something like minuteness; and how can we more effectually attain this end, than through the medium of our numerous provincial hospitals, situated, as they are, in almost every district where a dense population is to be found? But already the example has been set in some of our best hospitals, and among the foremost, is that of the Worcester; others, if I mistake not, are about to follow in this honourable career.

There are few rules of more real utility, than the appointment of proper and judicious visitors to an infirmary, residents in the neighbourhood, and such as are likely to discharge the duty. It is true that any governor may personally inspect the state of the infirmary and the patients, at any seasonable time, and if any matter shall occur, which he may deem worthy of attention, he is desired to communicate the same to the weekly, monthly, or quarterly boards. But it is usual to select them in the order in which they stand in the annual report, in order to make the duty as light as possible, and to give opportunity to every subscriber, personally, to enquire into the state of the charity, whether the rules are faithfully attended to, and the system works well. It

has, besides, another advantage; the greater number of visitors there are, the more familiar the benefits of the institution become, not only to the visitors, but their friends and connections, who, moved by the melancholy detail of suffering, are induced, perhaps for the first time, to throw their mite into the common stock. Such, indeed, is the importance of the duties of visitors, that, in some institutions, it has been thought advisable to annex certain privileges to the office; accordingly, we find a rule like the following, in the Sheffield, and some other infirmaries. "That any number of subscribers, *of one guinea* annually, may be nominated by any weekly board to assist as house visitors, and to form a part of the said board; and that *they be entitled to the same privileges as subscribers of two guineas annually*, so long as *they continue to act as visitors.*" This extension of privilege, however, should be understood to apply to out-patients merely, by no means conferring on a few solitary visits the right of recommending in-patients. It has also been recommended, where a large committee is appointed,* that they should choose visitors out of their own body; as a general rule, however, it is preferable to select them from the body of the subscribers at large, authorizing any such, in case of sickness or necessary avocation, to appoint another contributor to be his deputy. And, while I am speaking of the policy of awarding certain privileges to visitors whose services merit such distinction, may I be permitted to suggest the propriety of extending a similar boon to those clergy and ministers who gratuitously visit these receptacles of misery, to carry spiritual comfort to the sick and the dying; as has been observed by the author of medical ethics; "the moral and religious influence of sickness is so favourable to the best interests of men, and of society, that it is justly regarded as an important object in the establishment of every hospital. The institutions for promoting it, should, therefore, be encouraged by the physicians and surgeons, whenever seasonable opportunities occur; and by pointing out these to the officiating clergyman, the sacred offices will be performed with propriety, discrimination, and greater certainty of success." In some hospitals, I am aware, a salary is annexed to the office of chaplain, but in all populous districts, there is never wanting a supply of conscientious and well qualified pastors, who would, at stated periods, tender their gratuitous services, and deem it their best reward to be made the honorary instruments of spiritual relief to their poorer brethren.

In making the annual reports of hospitals and infirmaries, an abstract of the number of patients admitted, and the manner in which they are discharged, is generally all that is given. By constructing the abstract in the ordinary manner, says Dr. Clarke, no useful information can be obtained, because the par-

* The committee should, as far as possible, be an open one. In addition to the members regularly elected, the presence and co-operation of any Governor should be encouraged.

ticular diseases are not mentioned. Nay, even the real proportional mortality cannot be ascertained, because several deaths happen among those who formerly were in-patients, but who are discharged under the article "made out-patients," which cannot be brought to the account; and the discharges of the out-patients are made in such a way, that little dependence can be placed on them. These abstracts, as commonly managed, can, indeed, answer no other purpose, than to impress the governors with a notion, that their charity is extremely useful, when, perhaps, it is the very reverse; and induce them to believe, that the sick have every accommodation, whilst several perish annually from being promiscuously crowded; and whilst others, from the same cause, make their retreat from the hospital, and, though unnoticed, die with more quiet at home. He proceeds to observe that many important advantages would result to hospitals and infirmaries, from the establishment of accurate and comprehensive returns of the sick; yet it must be confessed that they will never attain to any great perfection, without the express attention of the physicians and surgeons respectively to the entry, and to the mode of dismissing their patients. There should be no endeavour to make the practice appear more successful than it really has proved. Should this, however, be attempted, improved returns, from having the particular diseases prefixed to the event, will still afford much useful information, and also serve to detect any peculiar management which may have been used to place the practice in too favourable a light.* I cannot do better than re-echo the sentiments of Dr. Cummings, of Chester, in describing the benefits of such a plan of accurate returns of the sick: 1st. The prevalence of diseases at different seasons and different places, together with their comparative and proportional mortality, will be readily ascertained. 2nd. Hospitals or infirmaries will, by these means, have the power of improving each other; for instance, if it be found that in one hospital, compound fractures, and other diseases, requiring quietude and pure air, are attended with great mortality, and in another hospital, with inconsiderable risk; and if it be also found that the former charity is crowded and ill ventilated, whilst the latter enjoys pure air and good accommodations, upon proper representation, the governors will be induced to improve the defective institution. 3rd. The chance of life, after important operations, will be ascertained upon a large scale. 4th. The comparative safety and recovery, after amputation, by different modes of operating, will be more justly estimated, and the superiority of one mode over another, ascertained.

The diminution of mortality, from the improved system of constructing modern infirmaries, has been proved in so many instances, that it seems superfluous to dwell upon the subject; one

* I have availed myself of the contributions of Dr. Cummings, of Chester, addressed to the committee of the Chester infirmary, in the above observations, and can safely recommend them for general perusal.

or two instances it may be worth while to enumerate. The royal hospital at Woolwich, for instance, which consists of a centre and two wings; the centre contains 16 wards, with 6 single bedsteads in each; the south wing is allotted to convalescents, and has 8 wards, which contain 8 single bedsteads each. The *wards in the front building are distinguished into these; for sores, casualties, venereals, pectoral complaints, fevers, and miscellaneous diseases.* This hospital now enjoys the most complete succession of fresh air, but in cold weather it has also the advantage of being supplied with air of a proper temperature. The diminution of mortality has been such, that of 7,526 patients, the deaths were 133, being only 1 in 56; and after deducting 1,985 trivial complaints, 1 in 35; of 27 fractures, simple and compound, 1 died; and of 22 amputations, 2 died.

Another instance of this change of mortality, arising from improved structure, may be cited in the Northampton infirmary, an account of which I have already given in a former paper. This excellent infirmary, it is well known, was re-built under the direction of the late Dr. Kerr, who formerly served in the military hospitals abroad, and who, having seen the ill effects of crowding patients together, and of vitiated air, has completely guarded against it in the construction of this house. The annual average of in-patients is 650, and the deaths 1 in 31. The proportion of deaths after amputations and compound fractures, is certainly not 1 in 20; in fractures of the skull, not above 1 in 8; and in simple fractures, scarcely an instance of mortality on record. Whereas, in the old hospital, 1 in 19 of the in-patients (communibus annis) died. Such is the difference between good and bad hospital arrangements.* Other examples might be cited, if it were necessary, to expose the mischievous consequences resulting from the early mode of constructing hospitals; the crowded state of the wards, and the promiscuous intermixture of all classes of diseases. By a regular classification of cases, the requisite grade of temperature may be apportioned to each, and the smallness of the wards ensures a greater degree of privacy, which, to some patients, is a boon of no small moment. If, from salivation or diarrhœa, or other causes, the smell becomes offensive; or if the noise from a cough is distressing to the rest, the evil is soon redressed, by the removal into another ward.

It will be seen, also, by a reference to many of the hospitals which I have described in your former numbers, that a very salutary practice is now adopted, of *allowing convalescent patients the use of a day room.* The circumstance of continuing through the day in the room where they sleep, has a tendency to retard

* Percival's Letter to Dr. Aikin. It is very desirable in all hospitals, that, in addition to warm baths, the present useful system of employing medicated vapours in cutaneous and other diseases, should be more generally adopted. It is only necessary to refer to the surprising success resulting from its use, to give it more extended adoption.

recovery. That the bed clothes acquire a strong impregnation from the perspired vapours of the night, must be evident on first entering the chamber of a single person in health. It has, therefore, not without reason, been recommended in every hospital, especially such as are in any degree crowded, that all the patients who are capable of sitting up, should remain through the day in *larger apartments, or day rooms*, and that their wards and bedding should, in the mean time, be as much as possible exposed to ventilation. This becomes more necessary, when there are many afflicted with ulcers, or any disease which tends to aggravate the putrescency of the fluids, or deteriorate the purity of the air. In most infirmaries, the convalescent patients have the advantage of a neat garden, where they are allowed, at stated times, to enjoy the benefits of fresh air and exercise; benefits, let me add, to certain classes of cases, of primary importance. I had designed to have submitted some observations on the different tables of diet in use in some of our institutions, but this part of the subject has already been so fully explained in a late work by Dr. Murray,* that it is only necessary to refer the reader for information to a comparative view of the diet-tables of the different hospitals of Great Britain and Ireland, which he has published in connexion with the chapters on food and drink, contained in his work. This dietary was collected and arranged at considerable trouble and expense by the author, and is designed to shew the particular regimen selected for the sick, and peculiar to each district. His elaborate synopsis will prove of the greatest use to medical men and committees, in forming diet tables, both in point of health and economy, for any charitable institutions. It was a kind of document much wanted, for which the author is entitled to the thanks of the profession, and every friend to charity. It is hardly necessary to observe, that when it is designed to present a faithful account of diseases at different seasons of the year, meteorological observations on the state of the thermometer, barometer, rain, wind, &c. (all of which exercise so important a part in the conservation of the health of the body, and the due performance of its various functions,) are of indispensable importance. There are few institutions that cannot command the means of attaining this species of information, and any extra trouble it may occasion, will be amply compensated by the light it not infrequently sheds on the singular varieties which disease is apt occasionally to assume.†

* Vide Dr. Murray's Dissertation on the influence of heat and humidity, &c.

† In most infirmaries it is now usual to establish a medical library; indeed, where there are apprentices and in-pupils, it is of indispensable importance. Such, indeed, is the benefit arising from it, that in some of our larger institutions, it is usual to deduct 10 guineas per annum from the fee of each in-pupil, for the purpose of purchasing books for the use of the pupils and the faculty of the infirmary.

With regard to the regulation of privileges to subscribers, some difference will be found in perusing the rules of various institutions. But in all new infirmaries, it has always been thought expedient not to run the risk of admitting too many in-patients for the few first years, till it is clearly ascertained what the average expenditure is likely to be. In general, I believe, it will be found, that the privileges awarded to subscribers, are, on the whole, calculated at the highest rate consistent with prudence, and if every subscriber were to avail himself of them, some reduction must necessarily follow in the privileges. The present scale is founded on the supposition, (confirmed by experience,) that a considerable portion of the subscribers, from various causes, do not exercise their privilege. Instances, indeed, do occur, where individuals have availed themselves of their privileges to the full extent. In such cases, the full exercise of the right has entailed an expense on the charity. Indeed, it is a very wholesome regulation, and one, I believe, adopted at the Worcester infirmary, that no governor (whatever may be the amount of his subscription,) shall have more than one in-patient upon the books at the same time.* In a majority of instances, the right of recommending in-patients, begins at a two guineas annual subscription, or a benefaction of 20 guineas; all below this standard enjoying only the privilege of recommending out-patients. In most institutions, a subscriber of one guinea annually, has a right of having one out-patient always on the books, and so in the like proportion for greater sums. The rules of many infirmaries, allow the same scale of privileges to the heads or other officers for the time being, of any township, body corporate, or society, as to private individuals. In others, however, and I think, with reason, a larger amount is required in the case of the representation of public bodies, than in private individuals; a two guineas annual subscriber in the latter, being put on a par with a three guineas annual subscriber in the former. Where there are from two to three hundred parishes within the sphere of relief, this becomes a matter of importance. In many of our charities, it is a frequent complaint, that a large proportion of applicants come from distant townships in search of recommendations, from inability to procure them at home. When there are few resident subscribers, it becomes the more necessary that the overseers of the poor should subscribe; and they should be restricted in their recommendations to such poor as receive pay from their respective townships, except casualties, engaging that they shall not become chargeable to the parish where the infirm-

* This is compensated by an increased allowance of out-patients. It has also been proposed that subscribers (£1. 1s. per annum,) as well as governors of £2. 2s. and upwards, per annum, shall have the power to recommend one in-patient annually, in addition to their respective privileges, upon agreeing to pay for his or her board, at the rate of 7s. weekly. At Nottingham, fever wards were opened in 1827, and the charge for each patient is 10s. 6d. weekly.

ary is situate, on account of their becoming patients in the infirmary. Where a dispensary is annexed to an infirmary, (as at Manchester, for instance,) the privilege of sending in-patients commences at three guineas annually, and a subscriber of two guineas, may, however, have, instead of an in-patient, two *home-patients*, and the privilege as to out-patients, is the same in both. Indeed, where there is a disposition to waive the privilege of sending in-patients, every latitude should be allowed in the number of out-patients, as the expense in the latter case is so small, compared with the former. No benefactor or subscriber, however, should have more than 10 out-patients on the books at the same time. Every clergyman and minister of the Gospel, preaching or making a collection in any year, for the benefit of the institution, should have a right of recommending a certain proportion of out-patients, exclusive of any right he may possess as a private subscriber. The privilege derived from congregational collection, however, should be exclusively confined to the poor of their own congregation. In all infirmaries, it is enacted, that the medical officers are ex-officio governors.

There is also a practice adopted in some institutions, where the funds are inadequate, of admitting patients, upon their paying 5s. or 6s. a week towards their support;* and where the state of the working classes has been such as to admit of it, this sum has been paid from their own resources; in other cases, from the funds of friendly societies, and sometimes from charitable contributions.

How far this principle is capable of extension, remains to be proved by future experiments. The practice, however, seems most successful, where the working classes have entered into associations, to raise funds by weekly or monthly collections, for this purpose. Such an instance is recorded by Dr. Clarke, in the manufactory at Etruria, where the workmen subscribed, in the book appointed for the district, £20, towards building the medical dispensary and house of recovery; and also the sum of 16 guineas for the support thereof, to be paid every year, which last money they raise by the very moderate contribution of one half-penny per week for each person, and pay it into the hands of their employers at fixed periods. They become entitled, thereby, to recommend 18 patients every year to the house of recovery, and to have, besides, 18 patients constantly on the books of the dispensary; and supposing that these 18 should be changed once in every month, they will have it in their power to procure relief, in good advice and medicines, for 216 persons within the year; other sums would be entitled to proportional advantages.†

* It may be worth recording, that a clause of this kind is sometimes annexed in cases of accidents, occasioned by the improper or furious driving of public carriages or vehicles of any description, viz. that the following charges be made; for board and lodging, not less than 7s. 6d. per week; to the nurse, 2s. 6d. per week.—Vide Worcester rules, and others.

† Vide Dr. Clarke on friendly societies.

I have now directed the reader's attention to the principal rules adopted in most of our English hospitals, especially those which I had either omitted altogether, or only cursorily glanced at, in my preceding papers on this subject. Other remarks might have been added, but the conviction that I have already, perhaps more than enough, occupied your attention, has induced me to restrict my observations, as much as possible, to objects of a practical nature. I have only to recommend, where the population is numerous, and no local objection exists, the union of the dispensary system to our infirmaries, as, in many instances, a more acceptable, and, at all times, a more economical mode of relief than admission within the walls of an hospital. It should never be forgotten, that the sole and legitimate object of all infirmaries, is the admission of such cases as cannot receive the same relief in their own houses, and that the separation of the sick poor from their families should cease, whenever they can be equally well relieved as home patients; for it should never be forgotten, that the end of medical charities is not to remove the sick from their friends, but to remove only those whose recovery could not be so well attempted at home. In all other cases, the separation of a patient from his family, has a tendency to weaken the domestic ties of life, to defeat the salutary end of all sickness, as well as to alienate the charity funds from cases of more urgent necessity.

ARTICLE II.

Observations on the Laws of Life.

BY JONAS MALDEN, M. D.

That Medicine is a conjectural art, is a remark of high antiquity;* that it is influenced by fashion is a prevalent opinion in modern times. The former is the candid avowal of philosophy, and a just conclusion from accurate observation. The latter is a short and pointed way of explaining, what to those not conversant with the art must otherwise appear unaccountable, the frequent changes which take place in the opinions and practice of the medical world. It is not my intention to expatiate on the credulity engendered by long suffering and lingering hope, by the fear of death and the love of life, in which the uneducated and unprincipled vender of a nostrum finds a field for dangerous experiment, and a plentiful harvest for impudence, rapacity, and fraud, and which often leads, by the assistance of garbled statements and false reasoning, to the temporary celebrity of an inert or even baneful treatment of disease. These circumstances, however, conspire to influence opinion, and, in the language of the day, to establish a fashion out of the pale of the profession;

* Est enim hæc ars conjecturalis, neque respondet ei plerumque non solum conjectura sed etiam experientia.—*Celsus.*

but the physician of well-trained mind, who pursues with industry the steady light of truth, will not often be misled by the *ignes fatui* that assume its likeness, in order to dupe the ignorant and the unwary.

Medicine is a conjectural art, from the very nature of the subject to which it is applied. The uncertainty of experience, and the fallacy of testimony, of which its followers complain, may be traced in most instances to the endless variety of states of which the living human body is susceptible. Its construction is complex; its actions diverse and numerous, intimately connected, mutually balanced, but their balance easily subverted. In different individuals, from nature or habit, different energies are predominant, or different actions associated. Climate, diet, heat, cold, the dryness and humidity of the atmosphere, exercise and clothing, in their ever varying degrees, act perpetually upon what in itself is so liable to change. When to these we add the influence of moral causes in the excitements of passion, and the exercise of reason, it will appear that the physiology of civilized man is a subject of study not easily traced in all its intricacies, or viewed in all its bearings, and that in judging of the effect of external agents upon a machine so various and so variable, we must be often perplexed by contradictory results, and surprised by unaccountable exceptions to general laws.

Is it matter of wonder, then, that in all ages, speculative and ingenious men have exercised their fancies in order to reconcile the discrepancies, or to unveil the mysteries of a subject so complex and obscure?—that, goaded by that insatiable curiosity* which gives ardour to the pursuit of science, they should have had recourse to analogy where experience failed them? that, when they found observation and experiment uncertain, difficult, or impossible, they should have illustrated their subject with the false light of remote similitudes?

Many have deceived themselves and others by hasty conclusions from too limited observations. Many have observed inaccurately, and then, with a strict adherence to logical rules, concluded erroneously: and many have arrived, by a false process of reasoning, at conclusions unjustified by their observations and experiments, however extensive and correct.

Thus, at different periods, have men of zeal and talent, industriously but unwittingly, spun cobwebs of error, which at once darken the temple of medical science, and entangle the more humble worshippers at her shrine.

For in medicine, as in other departments of human knowledge, the opinions of celebrated men, however remote from nature and from truth, have often gained converts, through the mere weight of their authority. All who practise an art have not talents or leisure to investigate in detail the principles that direct it. Much,

* Inest naturâ mentibus nostris insatiabilis quædam cupiditas veri videndi. —*Cicero.*

therefore, is taken for granted, and acquiesced in without inquiry; till, perhaps, after a lapse of time, some individual more highly gifted than his fellow-labourers, or who has more leisure for research, detects inaccuracies which had been long current for truth, or discovers truths which till then had escaped observation.

In this manner schools or sects have been successively established, that have long retained an influence upon the opinions, and consequently upon the practice, of medical men: and in this sense, *there has been fashion in medicine;* fashion, not mutable from caprice, but changing from the very nature of the subject studied, from the often erring though zealous labours of its students, and from the progress of discovery both in medicine, and in other sciences; the latter of which may be likened to mirrors so arranged as to reflect light upon medicine from every side; a light, unfortunately, not steady and equal, but wavering and changing, as the brightness and position, the size and number of the mirrors, vary.

An opinion has of late been much in fashion, which I believe the French have the honour of first attempting to graft on physiology; an opinion calculated to bias the judgment, and influence the conduct of men both in and out of the profession; namely, that organization, in other words, that the peculiar structure of living beings, is alone the cause of all the phenomena of life.

It is probable that this doctrine could not have been so speciously upheld, nor have had so much rhetoric expended on it, if more caution had been employed in the definition and use of terms.

It cannot be imagined that the defenders of this opinion attach any other meaning to the word *organ*, than that of an instrument employed for the execution of a certain purpose in the economy of a living being. Thus, the heart is an organ or instrument for effecting the circulation of the blood; and the liver is an organ or instrument for secreting bile from that fluid.

The words *action* and *function* having different meanings, should not be employed in the same sense. Their indiscriminate use has produced much ambiguity, and led to much error.

The *action* of an organ is its particular motion or series of motions. The alternate diastole and systole of the auricles and ventricles of the heart, constitute its action. The *function* is the office performed by the action of an organ; thus, the circulation of the blood is the function performed by the action of the heart and blood-vessels; the secretion of bile the function performed by the action of the liver; the decarbonization of the blood the function performed by the action of the lungs. A being is properly said to be *organized*, when it is endowed with organs or instruments, as above defined.

In physiology the words structure, texture, fabric, tissue, and other similar terms, are all employed to express the various arrangements of the particles of matter of which a living body with its organs is composed.

Let us now examine in what particulars living organized bodies resemble inert matter, and in what they differ from it.

The matter of living organized beings has the properties of solidity, extension, impenetrability, and divisibility, in common with inert matter.

It has, like inert matter, various qualities of softness, hardness, solidity, fluidity, smoothness, roughness, elasticity, &c. depending on its various modes of arrangement and degrees of aggregation; and it obeys, like inert matter, the laws of gravitation and cohesive attraction.

It appears, then, that the matter of inert and living bodies has so far the same properties and qualities, and obeys the same laws. Now these laws "are to be considered not as occult qualities supposed to result from the *specific forms* of things, but as general laws of nature, by which the things themselves were formed; the truth appearing to us by phenomena, though their causes are not yet discovered."*

If, then, it be unphilosophical to attribute the laws of inert matter to the operation of *specific forms*, there cannot, I think, be less absurdity in accounting for the peculiar phenomena of living bodies, by attributing them to organization, or any peculiarity of structure: for, in what do living bodies differ from inert matter? *The laws of their motion* are different.

The motions of inert matter are subject to laws which act with such constancy and regularity, as to admit of mathematical certainty or demonstrative evidence in all our reasoning respecting them; but the motions of living beings beginning in them, and not produced by any mechanical impulse from without, or in accordance with any known physical laws of motion, act in opposition to, and resist, the laws by which inert matter is controlled; and this they do, not in an uniform and regular manner, admitting any certain calculation respecting them, but in modes and degrees as various as the functions to be performed, the ends to be attained, and the laws of inert matter to be overcome by the action of different organs.

The seeds of some plants remain perfect but inactive for an unlimited time. Their peculiar actions do not begin till under certain circumstances they are presented with matter fit for the nourishment of the embryo plant. The circumstances favourable to the commencement of these actions, (namely, the presence of atmospheric air, of water, and of a temperature sufficiently elevated,) are those under which, according to the known laws of inert matter, motions would take place subversive of the composition of vegetable substances; yet, under these very circumstances, the vegetative process advances, the seed absorbs moisture, the root of the infant plant unerringly shoots downwards, the leaf-bud as uniformly ascends, the leaves expand, the other organs of the plant are gradually developed, and all their various functions performed.

* Sir Isaac Newton.

Mr. Hunter, when pursuing his inquiries into the growth of the chick, in the process of incubation, observed that, whenever an egg was hatched, the yolk (which is not diminished in the time of incubation,) was always perfectly sweet to the very last; and that that part of the albumen which was not expended on the growth of the animal, some days before hatching, was also sweet, although both were kept in a heat of 103° in the hen's egg for three weeks, and in the duck's for four. He observed, however, that if an egg did not hatch, it became putrid in nearly the same time with any other dead animal matter. He found, also, by experiment, that an egg has the power of resisting the abstraction and communication of heat, in a degree equal to that possessed by many animals. An egg not only exhibits these phenomena, but, like the vegetable seed, begins actions, which may be traced from their first visible effect, a small spot of blood, to the perfect formation of a living animal.

If from these motions, so evidently at variance with chemical laws, we pass to the consideration of voluntary motion, we shall find it to be equally at variance with mechanical laws.

If I ascend a ladder, the muscular motion required, proves that I have a resistance to overcome. This resistance existing in conformity with the laws of gravitation, I am conscious of a capability of opposing, and also, by a remission of muscular exertion, of yielding to its agency. The degree of force which I use is to a limited extent within my power, as also the rapidity of succession in the muscular actions; so that I can ascend the ladder quickly or slowly, stop in any part of my ascent, and then go on again. In a word, I can vary and interchange the quickness, slowness, and cessation of progression in this experiment, to a considerable extent; but an unfortunate slip of the foot might unequivocally prove, by the consequent velocity of my descent to the earth's surface, the nature of the law I was opposing, and perhaps, to my cost, the divisibility also of my material frame. If we admit these facts, (and I have purposely selected those which are too obvious and familiar to be doubted,) we must, at the same time, admit that living beings begin motions in themselves which, resist, and, for a time, suspend, the ordinary laws of motion in inert matter—and I think it may fairly be presumed that they do not possess this faculty, in consequence of their organization, or any peculiarity of structure.

For, even, if it were granted that their structure and organs always exist before the display of any of the phenomena of life, which point is by no means clear, still such an opinion leads inevitably to this absurd inference, that the laws of inert matter, by their operation, can produce an arrangement of it, which enables that matter so arranged, to act in opposition to the very laws by which it was arranged.

But let it be supposed that there is no absurdity in this, and that organization may be the cause of all the phenomena of life, it follows, of course, that every organ, the structure of which is

complete, (life being in this case a quality depending upon the structure of an organ,) possesses a life proportionally complete, and as the peculiar structure of each organ is confined to itself, its sphere of action must be limited by its own circumference, each organ would independently act, nourish, and repair itself; there could be no catenation or harmony of action, no mutual dependence of function between remote organs; there would be nothing to constitute the unity and individuality of any living being.

Further, if the mere structure produces the action of each organ, then is the brain of man correctly stated to be the organ which, in consequence of its structure, feels, remembers, reasons, wills; these being the functions performed by it; but, on this supposition, this organ, in the exercise of feeling, memory, and reason, invariably concludes that it is the same being it was yesterday or years ago, from the commencement of its existence, and that it will be the same being to-morrow, or years to come. In other words, a man of sound mind never feels any doubts of his personal identity: yet there is no fact in physiology more clearly proved than that instead of "a constant union among the component particles" of organs, "there is a continued change, so that the body cannot be called the same at any two successive instants;"* and it has never been contended that the brain is an exception to this law. The consciousness, then, of personal identity, cannot be a function merely of brain.

Those who introduce organization, in their physiological reasonings, as a sufficient cause of the phenomena of living beings, forget that, when they themselves use the terms vital powers, vital forces, vital properties, vital influence, &c. they contradict themselves, and virtually acknowledge the existence of some other cause: for if the definition of Bichat be admitted, "that life consists in the sum of the functions by which death is resisted," then the vital powers, &c. or the powers, &c. of life, are the powers of "the sum of the functions by which death is resisted;" or, in other words, the cause of the actions by which organs perform their functions, is the sum of the functions performed, which is absurd.

Or, if another definition be received, "that life is the assemblage of all the functions, and the general result of their exercise,"† then the vital powers, &c. or the powers, &c. of life are the powers of "the assemblage of all the functions and the general result of their exercise;" or, in other words, the cause of the actions, and consequently of the functions of the organs of living beings is the general result of the exercise of the assembled functions, which also is absurd.

Yet, unless this definition be correct, an argument founded upon it falls to the ground, viz. that the vital powers are the result of the structure and organization, because the functions vary with the structure and organization. If the vital powers

* Lawrence's Lectures, p. 139.

† Lawrence's Lectures.

be the general result of the exercise of the assembled functions, this assertion may be true; but if it be absurd to make the effect the cause, then, to him who has observed the mechanism of the various organs of living beings, the above statement must appear equivalent only to the following:—a carpenter does not cleave with a saw, nor saw with a hatchet; he does not bore a hole with a hammer, nor hammer with a gimlet, which nobody will deny. Each of his instruments is constructed and designed for a particular purpose, and is not applied to uses for which it was not intended. It is the wise adaptation of the organs of living beings to the attainment of certain ends, and the variety in their structure agreeing with the variety of their functions; it is their obvious mechanical contrivance, in many instances, combined with the conviction that, unless put into motion by some cause, all this contrivance would be useless, that leads us irresistibly to the conclusion that such a cause exists.

Others, again, with Cuvier, tell us that "the idea of life is one of those vague and obscure ideas suggested to us by the observation of phenomena that succeed in regular and corresponding trains;" that "having observed in our own bodies, and in many bodies similar to our own in form and structure, a power of resisting, for a certain period, the laws which regulate unorganized bodies, and even of acting upon other bodies in opposition to these laws, we employ the terms life, vitality, vital power, to express these apparent exceptions from the ordinary course of nature;" and with this definition, they are content, or profess to be content, for I can hardly believe that men and philosophers can be so destitute of the spirit and dignity of rational creatures, as to survey, with a cold-blooded prostration of their faculties, these extraordinary phenomena, and rest satisfied with the mere impression on their senses, and the statement that the cause of which these phenomena are the evidence, is a vague idea, or an empty term. If, in scientific investigations, we are to tie ourselves down exclusively to the testimony of our senses, we must (against demonstrative evidence,) believe with Epicurus and Lucretius, that the visible magnitude of the sun is its real magnitude, and (against the evidence of experimental induction,) deny the existence of most of the gasses which in chemistry are known and distinguished only by their phenomena.

Is it not, then, more consonant to the rules of correct reasoning, and the spirit of genuine philosophy, to attribute the peculiar motions of living beings, to the agency of laws* known to us

* I am aware of the mode in which modern metaphysicians have endeavoured to subtilize away the notion of power from an antecedent, however uniform, by resolving all observed sequences into successive states of the observer's mind: but, *in spite of their speculations*, man instinctively makes an uniform antecedent *potential*; *finds* it *so* when he himself can connect it with its consequences, by which it becomes a delegated *power* in his hands; and he always infers, where he cannot prove, the antecedence of an agent to an uniform series of consequences.

only by the phenomena, than, with the paradoxical credulity of scepticism, to endow mere organization with powers so extraornary ?

The physiologist, who is a sincere student of the works of nature, must be often made conscious of the limited number and power of his senses, and of the impassable boundaries which are set to human reason, and ought, therefore, to bear in mind, that a corresponding humility, so far from degrading knowledge, imparts a lustre and a weight to it; and that he will neither compromise the dignity, nor disparage the value, of his pursuits, by candidly confessing that, as "there are more things in heaven and earth than are dreamt of in *his* philosophy," there may exist "principium *illud vitæ*," "a quo omnes naturales actiones pendent et gubernantur."*

ARTICLE III.

Practical Remarks on Gout, Apoplexy, and Paralysis.

BY JAMES M'C CABE, M. D. CHELTENHAM.

Venienti occurrite morbo.—*Persius.*

I HAVE grouped the above diseases together, and I believe that those who are practically acquainted with them, will readily admit the relationship. Among the signs or symptoms of impending ill health, enumerated by Celsus, is that of becoming either stouter or thinner than usual. To lose flesh is a sign of febrile excitement, whether occasioned by organic disease, by mental anxiety, or by too great bodily exertion ; the termination of such a state, if not remedied, will be atrophy, or consumption. The opposite state, or that in which a person gains flesh, is less dangerous, but, as Celsus has well observed, is not unattended with danger. It is that state which leads insensibly to those diseases which I have placed at the head of this article, and which I purpose to make the subject of this paper.

At a certain period of life, when the restless activity of youth begins to subside into the more steady and orderly habits of manhood, if the health be otherwise good, that is, if there be no disease of any of the vital organs, men in general begin to grow stout. Various circumstances connected with individual habits and idiosyncrasies may retard or accelerate this period. Ease, opulence, and prosperity, are favourable to its early development; while, on the other hand, it is retarded, or, perhaps, altogether prevented, by the fatigues and anxieties of a mercantile or military life. When it does, however, take place, it gradually induces a disinclination to much bodily exercise, and,

* Heberden. Comment, p. 417.

as it occurs at that time of life when the mental faculties are in the greatest perfection, the constant exercise of these faculties increases the disinclination to bodily exertion. During this time, the pleasures of the table, and other social pleasures, are not neglected; a plethoric state of the system is gradually brought on, until, at length, after some prophetic warnings from the incubus of indigestion, the individual is awakened to the sad reality of gout.

Gout essentially consists in a species of articular inflammation, of a migratory character, accompanied, as all inflammations are, with some febrile affection of the system, and derangement of the function of digestion. In its nature it is not immediately dangerous, but in its consequences it leads to danger, and to the destruction of health. Nothing can be more erroneous than the opinion that has been held by many physicians, and is still, I believe, entertained by some, that it is desirable to encourage a fit of the gout. We find that patients were formerly sent to Bath, recommended to drink the stimulating Bath waters, and to use a generous diet with stimulating wines, in order to bring on a fit of the gout; and it was thought that this critical explosion of the gouty diathesis removed from the system the seeds of innumerable diseases. This doctrine, and the practice necessarily resulting from it, I hold to be highly pernicious. A fit of the gout confines a man to his couch for weeks, often for months; such confinement alone, independent of disease, would injure the health; and to encourage or promote a repetition of such attacks, is surely to accelerate the destruction of health. Inactivity and indolence are among the principal causes of gout; to bring on a fit of gout is to preclude the possibility of taking exercise, and thus to perpetuate its paroxysms in endless succession.

An attack of gout is generally attended with such dyspeptic and febrile symptoms as destroy or injure the appetite, and enforce, from necessity, for a time at least, a strict and abstemious diet. In this way it may be said to be useful; but this is to destroy the appetite by repletion and stimulation, in order to oblige the patient to become abstemious; which, after all, is not accomplished without an expenditure of health. Dr. Johnson has observed that, it is easier to be abstinent than abstemious, by which he meant that people will eat and drink as long as they can eat and drink, and will only abstain when their appetites fail them. This doctrine is a kind of dietetic necessity, very convenient for those who cannot, because they will not, be abstemious. It would be better, however, to try to exercise a little free agency, and by an occasional course of alterative medicines, and occasional discipline in diet, to prevent or to obviate the attacks of the disease.

Next to an abstemious diet, the best means of preventing gout, is exercise. All writers agree in this; but how is a man to take exercise who is crippled from gout? Celsus recommends, to exercise the gouty or inflamed joint, but says it ought not to

be done if it causes pain; pain it certainly will cause if we attempt to walk, while the joint of the great toe is inflamed from gout. I have met with several cases where, from the inflamed state of the joint, walking exercise was almost impossible, and if attempted, particularly along the unyielding flags of a town, occasioned the most intense pain. In these cases, and under these circumstances, instead of confining the patient to his couch, I have recommended riding on horseback; and it has often happened that after a ride of twelve or fifteen miles, the inflammation of the joint has been found to have entirely subsided, that the joint which the night before had been hot, swollen, and painful, was now become cool and comfortable, and that the patient has enjoyed a good night's sleep, although the night before he had been sleepless from feverishness and restlessness, the usual concomitants of gouty inflammation.

How exercise on horseback removes arthritic or gouty inflammation, is a subject more theoretical than practical; but all practical rules, in order to their being permanently useful, ought to be reduced to general principles. To employ remedies, without being guided in their application by some principle, is mere empiricism; and the experimenter in medicine, who frequently employs, in the same disease, medicines which, in their known effects, are diametrically opposite, is seldom a good practical physician. Celsus, where he recommends exercising the gouty joint, recommends also immersion in cold water, provided the joint be swollen as well as inflamed. This recommendation, however, he qualifies, by saying it ought not to be immersed long at a time, nor the immersion frequently repeated. In fact, he, as well as others, appears to have apprehended danger from cold immersion. The late Doctor Gregory, of Edinburgh, was accustomed, in his lectures, when treating on the subject of gout, to mention the case of his father, who had been long subject to this disease, and who died suddenly. It was reported at the time, he said, that his father had been using cold immersion for the cure of his gout, and to that was his sudden death attributed. Dr. Gregory contradicted the report as regarded his father, but strongly reprobated the practice of cold immersion in gout. I agree with Dr. Gregory that the application of cold to the extremities is dangerous, particularly while the individual remains in a state of inactivity; and still I am inclined to attribute a part at least of the good effects of riding on horseback, to the abstraction of heat from the gouty extremity. That morbid heat which accompanies the disease, and which would have increased and accumulated had the limb been kept extended on a couch and loaded with coverings, is dissipated by evaporation during the exercise of riding; and the cooling process of evaporation, which, during a state of inactivity, might be dangerous, is counteracted by the freedom of circulation which horse exercise always produces. In addition to this, the return of blood from the gouty extremity, is promoted by the action of the muscles in riding,

and by atmospheric pressure. To these causes, then, the abstraction of heat by evaporation, and promoting the return of blood from the gouty extremity, I would refer the good effects of horse exercise in removing or preventing a fit of the gout.

An opinion prevails very generally, that medicine can do little in gout—hence the disease has been termed the "opprobrium medicinæ." Nothing can be more erroneous than this opinion, nor more injurious to the patient. Gout is as much under the control of medicine, as any other disease. It may be shortened in its duration, diminished in its violence, and frequently prevented, by judicious medical treatment. This is all we can do in fever; this is all we can do in any disease. He that looks for a specific, or says that he has found one, deceives himself, or his patient, or both. There is no specific in medicine. There is no infallible remedy. The most judicious treatment will not always be successful. This difference of result where the treatment has been the same, must depend on the altered condition of the patient. I have lately had under my care, an elderly gentleman, who has been a martyr to gout for the last twenty years. At the commencement of his attacks, he always took large doses of the vinum colchici, and it was not till alarming symptoms shewed themselves, that he ever called in a physician; within the last two years, I have been several times called to him in that state. I usually found that the arthritic pain and inflammation had subsided; that his pulse was feeble and fluttering; that he had subsultus and coma; and that his tongue was as black and as dry as a piece of charcoal; in fact, with most of the symptoms that mark the last stage of typhus fever. These symptoms of extreme exhaustion were probably occasioned by the large doses of the colchicum, rather than by the disease; and they gradually gave way under the use of cordials and diffusible stimuli. After each recovery I endeavoured to impress upon him the necessity of desisting from the use of the colchicum, or, at all events, not to take it without medical advice; but in vain, for the very next time that I was summoned to see him, I was sure to find him in the same state, and that he had taken the colchicum to the same extent. He was so convinced, he said, of the utility of the colchicum in relieving the pain of the extremities, that he was determined to take it at all risks, and, as he knew that I would object to the use of it to the extent that he thought necessary, he first took the colchicum, and then sent for me to remedy its effects. His last attack occurred in March last, (1830,) and although the usual remedies were had recourse to, he did not rally in the usual way. For several days the stomach rejected food and medicine, and so convinced did he appear to be of the impossibility of his recovery, that, although I held out to him some hopes, he refused to take either medicine or nourishment. On one occasion when I called, I found that his mental powers were so impaired, that he scarcely recognized his wife or son; that he had appeared to wish to say something,

but that after some unavailing efforts, he said he could not remember any thing. In this state he lay several days, either refusing to take any thing, or if he did take it, the most distressing sickness was sure to follow. At length, I suggested strong bottled ale, of which he took a glass, which remained on the stomach. From this time he began to rally. He tried a great variety of ales, and at length gave the preference to Taunton ale. In fact, he recovered, and his recovery I attributed to the ale. He has now (August, 1830,) so far regained his physical and mental powers, that, to the surprise of his friends, he has resumed his station at the whist table in the club room. I have repeated my injunctions about the colchicum, which, after such experience, he may now probably attend to.

In the same plethoric state of the system, and about the same period of life in which gout usually occurs, men are also liable to apoplexy. It is a law of the animal economy, that organs or structures, when much exercised, receive more than their usual supply of blood. The brain, which is the material organ of the mental faculties, is subject to this general law; and sometimes, from too copious a supply of blood, it suddenly ceases to perform its functions, at a time when these faculties are in their highest perfection. Besides the predisposition which arises from a plethoric state of the system, accidental and moral causes are generally superadded. Whatever occasions great bodily or mental excitement, has a tendency to produce apoplexy; a military friend of mine, in excellent health, but fond of the barbarous amusement of cock fighting, had an attack of apoplexy in a cock pit, in Jamaica, not long since, of which he died in a few hours after. By the account which I received, he appeared to have been in a state of great excitement and restless anxiety for several days before the fatal event.

In May last, (1830,) I was called to a patient who had suddenly fallen down in a fit of apoplexy. He had been sitting at a table, writing, in his closet, at the time it occurred. Before my arrival, blood had very properly been taken from his arm by the medical gentleman who first saw him. I found that the patient had a short neck, and that his general habit was plethoric and apoplectic; his time of life between 50 and 60. I learned that, on the day previous, which had been very warm and sultry, he had ridden to the Cheltenham race course, having, I believe, horses in training for the ensuing races; and that he had complained much of the oppressive heat of the day. I also learned that, in early life, he had been many years in the East Indies, and, like most Europeans, had lived very freely there; and, probably, since his return home, if not freely, at least generously. From all these causes combined, I thought the case likely to be a dangerous one, and consequently gave a guarded prognosis. I had him bled freely from the nape of the neck, by cupping, after which, by means of diffusible stimuli, he so far recovered, that we had him conveyed to his bed. Here he had another attack, which

was complicated with epileptic and paralytic symptoms. Strong purgative enemata were administered, and drastic purgative medicines were given him as soon as we could get him to swallow. For several days he was in imminent danger. The cupping was repeated, and it required the strongest medicines to act on the bowels. This difficulty was increased by irritability of the stomach. To allay this, saline effervescing draughts, with calcined magnesia, and a few drops of the liquor opii sedativus, were frequently given. From the great mental excitation and aberration, together with frequent contractions of the muscles of one side of the face, that attended the case, it was apprehended that, even in the event of recovery, paralysis might ensue. This, however, was not the case; by following up the plan of treatment here stated, and enjoining the most perfect rest and quietude, he recovered, without any lesion of, or injury to, his physical powers or mental faculties.

In the treatment of apoplexy, there is nothing that is of greater importance, than to enjoin and enforce the greatest quietude during the recovery of the patient; mental as well as corporeal exertion ought, if possible, to be entirely suspended. In the progress of this case, I had associated with me in the treatment of it, another physician of this town, of well deserved eminence and celebrity. His views perfectly coinciding with mine on the great importance of quietude, by our joint influence, we prevented even his nearest relations having access to him, till such time as his recovery was so far advanced, that a relapse was rendered very improbable. Fatal relapses often happen, from the excitement occasioned by seeing and conversing with friends and relatives, too soon after recovering from an apoplectic or paralytic seizure, and to the rigidness with which we enforced our injunctions on this point, in this case, was his security from relapse, in a great measure, to be attributed.

As a preventive of apoplexy, it would be well for those who are of an apoplectic habit, or who are subject to occasional giddinesses, to attend particularly to their own sensations. It is not likely that a fit of apoplexy should take place without some previous feelings that might warn the individual of the approaching danger. A deficiency of memory, and an incapability of following out a train of ideas; hurried thoughts and hurried feelings; are some of the symptoms that might warn an individual of his danger. In such a state, the best thing to be done is to sit down, or recline on a couch, till the hurried feeling passes away; instead of which, relief is usually sought in change and exercise. The celebrated Dean of St. Patrick's, Dr. Swift, as appears from his correspondence, was subject to giddiness; his remedies were extraordinary ones; wine, bitters, and fast walking, particularly up an ascent. He says, in one of his letters, that he was obliged to drink a good deal of wine, on account of a giddiness to which he was subject. Moderation in every thing would have been a better prescription, but in nothing

does he appear to have been moderate. But, although stimulants and violent exercise are bad preventives of apoplexy, there can be no doubt but that a certain degree of tonicity in the circulating system, is a favourable condition to prevent an attack. Apoplectic attacks seldom take place during the stage or state of repletion. It is during the collapse or exhaustion that succeeds to excitement and stimulation, that apoplexy more generally occurs. In such a state, the heart, and other propelling powers of the circulation, are enfeebled, and with difficulty propel the blood through the remote venous system; consequently congestions of it take place in the sinuses of the brain which oppress the cerebral functions. It must be manifest that, in apoplexy occurring under such circumstances, we must not trust to depletion only in the treatment of the case; stimulation is, besides, absolutely necessary to rouse into action the enfeebled powers of the circulation. Strong stimulating and purgative enemata, with drastic purgatives by the mouth, as soon as the patient is able to swallow, will promote the circulation in the great venous trunks of the abdomen, and thus relieve the congestion of the brain; while camphor, æther, and ammonia, are the appropriate remedies to recruit the heart's action, and promote the arterial circulation.

A loss of power over the voluntary muscles, and frequently a loss or failure of the mental faculties, too often succeed an attack of apoplexy. This state constitutes what is called paralysis. Paralysis, as the name implies, is a failure of nervous power, which may either be general, or only affect a part of the body. If the original attack do not go to the extent of destroying consciousness or producing insensibility, but only occasions a loss of power, bodily or mental, instead of apoplectic, it is called a paralytic attack. We sometimes find paralysis take place without impairing, in the least, the mental faculties. A lady, at present under my care, with paralysis, was first attacked with it nearly three years ago. She has since had several attacks, and has been several times in imminent danger. The published writings of this lady, evince great research, and must have been the result of great mental application; and the estimation in which her works are held by the public, shews that she must have possessed a mind of a very high order. Her habit of body was always delicate, and her constitution naturally weakly. Paralysis, occurring under such circumstances, might be expected to impair the mental as well as the bodily functions. I have, however, closely observed her in all her attacks, and never could perceive the least obscuration of the mental faculties. Although this circumstance may be explained on the supposition of two distinct orders of nerves, nerves of motion—and nerves of sensation, it does not often occur in practice; for we more generally find paralysis to be a compound of mental and bodily infirmities. In the treatment of this lady, I avoid the extremes of depletion and stimulation, but I lean to the one or the other of

these plans according as the symptoms indicate the necessity. When the stomach and extremities feel cold and paralyzed, and when I observe a spasmodic affection of the muscles, of respiration and deglutition, I give ammonia and æther, or even warm wine and water, and apply warmth to the extremities. This state, however, is often succeeded by a re-action of the circulation, requiring antimonial wine and aperients, and sometimes, leeches to the temples; but more generally, only cold applications. A pill, consisting of a few grains of capsicum, given occasionally, has been attended with great benefit, in removing a flatulent distension of the stomach, accompanied with a sensation of coldness, from which she suffered much at the early period of her illness, but from which she has been latterly couparatively free.

The decussation of nerves at their origin in the brain, has been frequently noticed by medical writers. Aretæus makes mention of it in his chapter on paralysis. The following case, I think, affords a good practical illustration of it. An officer of rank, and who had seen a great deal of service in different climates, returned from India a few years since, on account of a paralytic attack. I happened to be in London shortly after his return, and a friend, who intended to bring him to Cheltenham to put him under my care, took me to call upon him. He was then under the care of a physician in town. I found him sitting on a sofa, in an old undress military uniform, having a bladder of pounded ice on his head, which he contrived to balance by sitting bolt upright. A countenance naturally stern, was dreadfully disfigured by a tremendous scar over one eye, evidently the cicatrix of a sabre wound. By the manner in which one shoulder fell forward, I could see that one side of the body was paralyzed, and glancing at the wound in the temple, I perceived that the paralysis was on the opposite side to the wound. On enquiry, I found that he had received that wound fifteen years before, in Sicily, when a captain, having been surrounded, with his company, by a whole regiment of French cavalry.

I think there can be no doubt, in this case, but that the wound in the temple was the original exciting cause of the paralytic attack, although occurring after an interval of fifteen years. A progressive loss of memory was the only effect he had noticed previous to the attack of paralysis. Of this he gave me an instance, which is sufficiently ludicrous. When commanding a regiment on a foreign station, and stupified, by close application, one morning, in making out those voluminous reports and returns which the service requires from the officer commanding, when he came to affix his signature, he found that he had forgotten his own name! The remedy he adopted was characteristic, it was military. He walked out of his quarters, and stood in the middle of the parade ground, where a nucleus of one officer is always sure to attract others. As he knew would be the case, he was soon joined by several of his brother officers, who, with

the usual salutation of "how do you do, Mr. ——," soon reminded him of his name. He thanked them for keeping his name in recollection, as he had forgotten it himself, and, returning to his quarters, signed his official documents.

This officer continued under my care for more than three years. Being of a very full habit of body, I had him cupped freely and frequently, besides which, I placed him under a strict regimen with regard to diet, to which he rigidly adhered. Medicated vapour baths were used frequently, and various other remedies tried. He had no relapse; that is, he had no fit of paralysis while in Cheltenham, and his general health was much improved; but he did not regain the use of the paralytic side.

From Cheltenham he went to France, where he remained about two years, and, from time to time, wrote me an account of his health, which appeared to continue much the same. From France he returned to the Highlands of Scotland, his native place, from whence I had a letter from him a few months ago. The date of that letter was about six years after my first introduction to him in London. In a fortnight after, I heard of his death, but I did not learn the particulars.

Thus ended, at the age of about 56 years, the career of a man originally of a strong constitution, possessing great physical strength and great mental power; and those who served with him and shared his dangers, say, that there was no better nor no braver soldier in the British army!

ARTICLE IV.

Cases of DISLOCATION *of the* THIGH BONE, *with Remarks,*

BY THE LATE MR. AVERILL, SURGEON, CHELTENHAM,

To which is prefixed, a slight Sketch of the professional progress and character of the lamented Author, part of which is extracted from the Cheltenham Chronicle.

"IT is instructive to know by what original qualities of the understanding, what course of education, what processes of mental discipline, what accidental helps, and what rule of conduct, men, who have arrived to promise or attain future eminence, were distinguished and furthered in their progress.

"It is probable that Mr. Averill owed more to common sense and unremitting attention to one object, than to any original brilliancy or superiority of the mental powers. It does not appear, with the exception of the circumstance that first made him known to Sir Astley Cooper as more than a common pupil, that he exhibited any such indications of surgical talent as to attract the notice of his fellow students, or to signify the decisive developement of it which was afforded at a subsequent period. His particular bent to surgery, and masterly attainment of it, was not so manifest until his return from France. This fact

confirms me in an opinion, which a very extensive observation of young surgeons at the schools, during these last three years especially, has suggested to my mind, that few enter into practice qualified to become *operative* surgeons, who have not availed themselves of the superior opportunities and system of Paris, except those individuals who have practiced operations in English hospitals and infirmaries during apprenticeships to those institutions.

"In estimating the causes of his success, it is necessary to premise that he received a broad and liberal professional education. In England, surgeons at all within the legitimate meaning of the word, are chiefly of two classes; a superior class, who like physicians have been from three to five years at the schools; and an inferior class, who usually pass the college at the expiration of two seasons, and whose acquirements in this very limited space of time, cannot be supposed, except in the cases of men gifted with *particular* talent, to qualify them for more than the ordinary and humbler routine of professional duties. Mr. Averill belonged to the first class.

"He thus commenced upon a very sure and sound foundation, and, guided by the strength of his judgment and understanding, took his subsequent steps with great circumspection and prudence. But his adventitious aids were very great. He possessed a good private fortune, which is a tower of strength to an individual in a profession, provided the security and ease which it ensures, are not suffered to sap his industry and perseverance. It gives a force and moral courage to a young surgeon, in attempting hazardous operations, which the anxiety of one whose prosperity depends upon the successful issue of the event, cannot admit of his feeling. It has other collateral advantages of immense moment. It enables a man to command all the legitimate means of introducing himself to the public, by the numerous modes of communication and intercourse by which persons are brought together in large towns; it enables him to support appearances amid a people who expect show; it prevents the depreciation to which mediocrity of worldly fortune is subject in a country remarkable for the thirst of money, and disposition to estimate character in proportion to the possession of it.

"The principles of his professional conduct were marked with firm integrity and manly wisdom. He heartily loathed every species of quackery, hypocrisy, artifice, and deception, of which the examples of success are so numerous in watering places, as to beset the best disposed, at their commencement, with extreme temptation. Throughout his entire intercourse with other professional men, he never took a dishonourable advantage, by hints and insinuations to their prejudice among their patients, or by adopting other practices of mean, under-bred, and cunning men. He never attempted to advance himself by puffs, agents, and displays of an artful and base description. He was a stickler throughout for professional etiquette."

As an author, Mr. Averill was favourably known to the medical profession, by his treatise on operative surgery, the first edition of which was published in the year 1823, and its avowed object was to supply a great defect in English surgery.

"If the surgeons of France," he says, "retain, in any respect, the superiority they were formerly acknowledged to possess over those of this country, it is as operators only, which can alone be accounted for by the attention paid in the French schools to the practice of operating on the dead. This single branch of the science seems to be less insisted on than might be wished or expected, by most English students, in the dissecting room. It is usually taught in London as collateral to the courses of anatomical lectures, few of which are devoted to the subject, while the practical knowledge is chiefly obtained from cases furnished by the hospitals. These are the only public opportunities of acquiring a qualification so essential to the professional character, so important to society. The author is not aware that any concise work exists, the sole object of which is to enable the student to practice surgical operations upon the dead subject, preparatory to performing them on the living; and he has, in common with several of his friends, frequently felt the want of some such guide to direct his studies. Descriptions of approved methods of operating on the living body, are, indeed, to be found dispersed through various surgical works, but all of them are too voluminous and too expensive, to be used in the dissecting room. By the publication of the following treatise, this desideratum is attempted to be supplied. For its contents, the author's chief responsibility is that of a faithful narrator; the methods of operating here described, not resting upon his authority as the best adapted for every possible case, but as the most approved, and such as are now generally pursued. Several of the operations are prefaced by historical remarks, which strikingly exemplify the improved state of surgery; and the whole is arranged in a manner consistent with the author's wish, of presenting the greatest number practicable upon one dead body: this being always a desirable object, and now rendered too imperative, by the impediments so injuriously opposed to the supply of subjects."

We cannot more favourably express our opinion of the merits of this work, than by saying that the author, in the succeeding editions of it, three of which appeared before his death, succeeded in bringing, in a concise form, much valuable information before the public, and thus fulfilled the promises held out in the introduction to his first edition. Mr. Averill was likewise a contributor to several periodical works, and his valuable paper on loose substances in the knee joint, published in the first number of our Journal, must be still fresh in the recollection of our readers.

We believe that the last production of his pen, is the following account of some cases of dislocation of the thigh bone. This Mr. Averill sent for publication to the editors of the Midland Reporter, a very short period before his death, which happened very suddenly, in consequence of a fall from his horse, in June last.

Case I.—Dislocation of the Thigh Bone into the Ischiatic Notch.

On Tuesday evening, September 2nd, 1828, I was called to the hospital, to see Thomas Perry, 6½ years old, whom I found in his father's arms, struggling, and crying very loudly. He was stated to have received an injury to the lower part of the belly, and the thigh, by a person jumping accidentally upon him out of a rail-way cart, and alighting between his thighs. As I perceived he moved both his legs, and as they appeared both of the same length, I conceived it to be only a bruise, and directed him to be put to bed for the night. The following day there was considerable swelling round the hip, and handling the limb occasioned the child a great deal of pain, and caused him to cry loudly. An evaporating lotion was directed to be applied, and aperient medicine was ordered. The next day, the swelling having still increased, leeches were applied, and any attempt to move the limb, or make a particular examination, set the boy crying to such a degree, as almost to cause convulsions. Occasionally, during the one or two following days and nights, he cried so much as to disturb the other patients, and the nurse observed he started frequently in his sleep. As the swelling subsided, he became quieter, took his food, and appeared easy. To-day, the ninth day from the receipt of the injury, the swelling having quite subsided, I made a more particular examination of the limb, and found that the head of the right thigh bone was dislocated into the ischiatic notch. On placing the two limbs parallel to each other, and bringing the toes together, the dislocated limb appeared to be from half to three quarters of an inch shorter than the other, and the knee was inclined inwards; the limb admitted of rather free motion, and when it was rotated, the head of the bone could be felt behind the acetabulum lying over the ischiatic notch.

My colleagues having examined the limb, and agreeing with me as to the nature of the injury, it was considered best to attempt the reduction with the pullies. To effect this, a wetted roller was applied above the knee, to which another portion of doubled roller was attached; the pelvis was fixed by a silk handkerchief being passed between the thighs, and then attached to the upper bed-post. The pullies being fixed to the roller at the knee, and attached to a table placed against the foot of the bed, another handkerchief was passed round the upper part of the thigh bone, so as to lift the head of the femur over the margin of the acetabulum. Extension was made in a direction obliquely forward, and kept up for twenty minutes, when the knees appearing parallel to each other, the pulleys were suddenly loosed, in the hope that the head of the bone would be drawn into the socket; this, however, was not the case, for it returned again to the ischiatic notch. Extension was again made, and continued for near half an hour, when, at the time the knee was being rotated outwards, the head

of the bone was drawn into its natural situation, the sudden jerk of which, though in so young a subject, was evident to all assisting in the reduction. The knees and feet were confined by a roller, and the patient was left.

Sept 23rd.—To-day he was lifted from his bed, placed on his feet, and allowed to try to walk, which he could not do without support. I directed that he might try the same daily.

Oct. 4th.—He was discharged from the hospital able to walk with but little lameness.

In offering a few observations on this case, I must plead guilty to the charge of not having minutely examined the boy when first admitted into the hospital; but I had no suspicion of a dislocation occurring in so young a subject, and I felt, at the time, satisfied, from the degree of motion of which the limb admitted, that the part was only bruised. That a dislocation into the ischiatic notch, in so young a subject as the one here related, is a very rare case, may be inferred from the fact that Sir A. Cooper, in the course of his extensive practice, has never met with an example of it. He has related one case of a little girl, seven years old, in whom the head of the bone was dislocated on the dorsum ilii, and this is the only case he has known of dislocation from accident in the young subject. When much swelling and inflammation are present, to make out the exact nature of injuries in the vicinity of the hip-joint, is exceedingly difficult, and, in all cases, not possible. I was once consulted in a case of this kind, in which, not exactly agreeing as to the nature of the injury, with the gentleman who was in attendance, a third was called in, of greater experience than either, and who differed from us both, giving his opinion in the most decided manner; yet this gentleman, I understand, on seeing the case again, after the tumefaction had subsided, gave an opinion directly opposed to that he had previously so unequivocally expressed.—A further proof of the difficulty of making a correct diagnosis of injuries in the neighbourhood of the hip-joint, is evinced in the case of a physician of eminence in an adjoining county, who, I am informed, though a long sufferer, and still lame from an accident of this kind, is not aware of the injury he has sustained. No means of reducing the muscular power were resorted to, in the before-mentioned case, further than exhausting it by continued extension. The boy was but a weakly subject, and I did not choose to risk the chance of a fatal termination, by producing a state of exhaustion from which it was possible he might not have recovered, therefore, neither the warm bath, nor emetic tartar, were had recourse to. My fears on this head must not be considered wholly without foundation, as two cases have come to my knowledge, in which death has speedily followed that state of collapse, produced by those means of depletion which are occasionally had recourse to, with success, during the attempts to reduce dislocations of this description.

Case II.—Dislocation of the Thigh Bone into the Foramen Ovale.

On the night of August 5th, 1829, I was sent for, with Mr. Skelton, of Charlton, to see Mr. Acott, aged 21, a muscular farmer, who, in returning from Cheltenham fair in a gig, with two others, was thrown from the vehicle, in consequence of the horse taking fright. We found him lying on his back, in bed, with his right thigh separated widely from the left, and the extremity near two inches longer than the other, admitting of very little motion, and that causing great pain. Though the head of the thigh bone could not be felt, there was no doubt in the minds of Mr. S. or myself, that it was dislocated into the foramen ovale, and, as soon as the proper apparatus could be procured, we reduced it in the following manner. The patient was placed on his back, on a table, in the passage of the house; a jack towel was carried round the pelvis, to fix it, and a belt, to which the pullies were attached, was passed round the upper part of the thigh, between it and the scrotum, and fixed to a staple in the wall. About twenty ounces of blood were taken from the arm, and a grain of emetic tartar given; slight nausea was soon produced; extension was then made in a direction obliquely outwards and upwards, and, in about three minutes, on bringing the knee inwards, the head of the bone was drawn suddenly into the acetabulum. The feet were then bandaged together, he was put to bed, and in about ten days left his room.

The ease with which this dislocation, in a very muscular man, was reduced, forms a striking contrast to the preceding, and shews how desirable it is that the attempt to replace the bone should be made as soon as possible after the receipt of the injury, and before the muscles have become in a permanent state of contraction.

Case III.—Dislocation of the Thigh Bone on the Dorsum Ilii.

Nov. 24th, 1829.—In consultation with Doctor Boisragon and Mr. Seager, I saw a lady, aged 44, who, two days previously, had dislocated her right hip. As the patient was thin, the head of the bone could be felt on the dorsum of the ilium; the limb was shortened, so that the great toe was resting against the tarsus of the other foot. As an attempt to reduce the dislocation the day previously, had been made, with towels, we thought it better to employ the pullies which were used in the precise manner directed by Sir Astley Cooper, for the reduction of a dislocation of this kind, and it was not till extension had been continued for upwards of an hour, that the head of the bone was replaced, which happened while the knee was being rotated. Emetic tartar was administered to the extent of eight grains, previous to, and during, the reduction, but no sensible effect was produced by it, till upwards of two hours after she was replaced in bed. The feet were bandaged together, and she did very well.

Our efforts to reduce this dislocation, were considerably opposed by those of the patient herself, who was, at the time, insane, to which circumstance, the tardy action of the emetic tartar may probably be attributed.

ARTICLE V.

MEDICAL JURISPRUDENCE.

*Remarks on the Improbability of Clews' Confession, before the Coroner's Inquest, with respect to the Murder of Hemming.**

The circumstances of this murder are pretty generally known to the public. Mr. Parker, a clergyman, resident at Oddingley, was murdered on the evening of the 24th of June, 1806. Hemming was seen to murder him, but escaped, and, excepting on the following day, was never seen afterwards, having, according to the evidence of Clews, been murdered that night. The remains of Hemming were found buried in a barn, in the parish of Oddingley, on the 21st of January, 1830. The bones were, for the most part, perfect, but the skull was broken into thirty-five pieces.

Thomas Clews, on his examination at the Coroner's Inquest held on the remains of Richard Hemming, the murderer of the Rev. George Parker, gave the following evidence: that the night after the murder of Parker, Captain Evans, a man named Tayler, Clews, and another, went into the barn, where the remains of Hemming were found, and that Captain Evans immediately called out—'get up Hemming.' Hemming was covered with straw; he partly rose up, as if he had been lying on his back, and as he rose, Taylor, with a blood stick, hit him somewhere about the head, two or three blows. The Captain said—'now he has enough; we will soon put him safe.' Taylor then searched round the opposite bay of the barn, and found a place where the dogs and rats had scratched holes: he did not throw out many spadefuls of soil, and cleared the side of the wall. 'That will do for him,' he said to the Captain, who lighted him. The Captain and Taylor dragged him across the floor into the hole which Taylor had dug in the opposite bay, and which he soon covered up."

The high respectability of the professional deponent who gave into the Grand Jury in Court, the following statement, induces us to lay before our readers the experiments made by him, to ascertain the probability of the correctness or fallacy of Clews' evidence.

* See the account of this Trial at the Spring Assizes, in Worcester, in the year 1830.

Isaac Downing, of Stourbridge, in the county of Worcester, surgeon, says—that about 20 years ago he was the resident surgeon of the Westminster Hospital; a situation which afforded him considerable practice in practical and operative surgery; that he has been, for the last 18 or 19 years, in extensive practice as a surgeon in a thickly peopled and mining country, where accidents, of almost every kind, are of frequent occurrence; that he has had considerable experience, during the last twenty years, in fractures of the skull; and, from his knowledge of the texture of it, at different periods of life, he should say that the skull of a healthy man, at 24 years of age, could not have been shattered into thirty-five pieces by *two* or *three* blows with a common blood stick, such as farriers use to bleed with, not loaded with lead or other metal, inflicted by a feeble old man of 70 years of age; and to satisfy himself more fully upon this point, he tried the following experiments, in the presence of a gentleman now in court:—

On a dead subject, 50 years of age, soon after death, (two days after) on the 7th inst. with a blood-stick *loaded with lead*, of about 9 inches in length, and of the weight of four ounces and a half, he inflicted nine heavy blows upon different parts of the head, one of which, given upon the front of the head a little above the frontal sinuses, was so severe as to cut a wound through the scalp, of about half-an-inch in length, down to the bone; but even this blow did not fracture the skull, although a blow afterward given upon the left side of the frontal bone, fractured and depressed a small portion of it; at least, from the feel of the part, this was the witness's idea, from the indentation left.

An experiment made upon a skull which had been in his possession 20 years, March 9, 1830.—Twenty-four blows given to it, as hard as he could strike, with a blood-stick, not loaded with lead, produced but one small fracture, and that upon the thinnest part of the temporal bone. Ten blows were then given to it upon the occipital bone, before a fracture was produced; it then split across from suture to suture.

Experiment upon a second skull.—Thirty-four blows from a stick, not loaded with lead, used as above, produced no impression. Ten blows were then struck upon the front of the head, by a gentleman present, 38 years of age, who used considerable force before the frontal bone gave way; it split, like as in the other instance, from suture to suture.—The reason witness assigns for the greater difficulty in fracturing this skull is, that it was one of an individual who had been dead but two or three years, consequently it was much stronger by being less brittle.

ARTICLE VI.

TOXICOLOGY.

Cases of Poisoning by Cantharides.

BY MR. WILLIAMS, SURGEON, BEWDLEY.

June 28th, about eleven o'clock p. m. I was called upon to attend William Glover, aged 19 years, who complained of violent pain in his stomach, bowels, kidneys, and bladder; a burning heat in his throat, with a constant and most urgent desire to void his urine; he stated that between three and four o'clock he had taken, at the request of a young female, about half-a-pint of raspberry brandy, which was very thick, and soon after set out on an errand to Stourport; when on the road felt violent pain in the stomach and bowels, which occasioned him frequently to lie down in the road, and caused him to be more than six hours in accomplishing the distance, which is only six miles. I went to the young female, who served in a liquor shop, and requested to see the bottle which contained the raspberry brandy; the bottle was promptly produced, and evidently had been recently washed, but the cork which stopped the bottle happened to be a very porous one, and in it were lodged many minute particles of the pulvis lyttæ; I immediately taxed her with having administered a deleterious drug to the young man, which she most resolutely denied, and attempted to account for the thickness of the brandy, and the young man's illness, from its having stood for two or three days in a copper vessel. I pointed out to her the flies collected in the cork, and ascertained afterwards that she had procured half an ounce of the Spanish flies from a druggist's shop that day; and there is every reason to believe that the greater part were administered to this and another young man. Having fully satisfied myself as to the cause of these urgent symptoms, I ordered him to drink freely of a mixture of sugar water and sweet oil until vomiting be produced, which happened in about ten minutes; but I could not discern any particle of the flies in the ejected fluid. Ordered to drink freely of linseed tea.

June 29th, horâ 4 a. m.—Skin became very hot; sense of burning in the throat more urgent; incessant straining to make water, which amounted to nothing more than a few drops of blood; pulse, 100 per minute; the tongue put on the appearance of having been covered with a thick coat of drab-coloured paint. V. S. ad ℥xvi. et capt. ol. ricini ℥iss. administ. enemata.

Horâ 9.—Symptoms much the same; bowels not moved. Ordered the castor oil and glyster repeated.

Horâ 12.—Bowels acted upon twice; strangury still very distressing, nothing but a few drops of blood passing; great tenderness over the region of the kidneys, ureters, and bladder; pulse, 100. V. S. ad ℥xiv. repet. ol. ricini et enemata. Take linseed tea and barley water freely.

Horâ 5, p. m.—The tenderness had much increased, particularly over the region of the kidneys; great restlessness, with occasional delirium; pulse, 115; other symptoms much the same. V. S. ad ℥xvi. repet. ol. ricini et enemata.

Horâ 12.—Restlessness very great; constant delirium, with some slight convulsion; face much flushed; the conjunctiva charged with blood; strangury most urgent; pulse, 125, hard and not compressible; bowels were open. V. S. ad ℥xxiv.

Note.—When I had taken away 18 ounces he became very faint, but I found there was such a disposition for reaction to take place, that I determined on taking away small quantities, so as to keep him in a state of syncope for nearly an hour; I then allowed him to lie down, and immediately gave him 8 drops of laudanum in some linseed tea.

June 30th.—Has had some sleep, and expesses himself much relieved; urine more copious, but very bloody and attended with great pain in passing through the urethra; pulse, 96. Rept. ol. ricini et enemat. 6tis. horis. Bowels were acted on freely during the day, and in the evening felt better; has taken nothing but linseed tea and barley water.

July 1st.—Has had some sleep; the urine voided amounted to eight ounces in twelve hours, very bloody; pulse, 96. Cont. ol. ricini et enemata.

July 2d.—Bowels open; urine more copious and less bloody; pulse, 86. Cont. ol. ricini.

3rd.—In the same state as yesterday.

4th.—Urine more copious and less bloody; pulse, 70. Capt. ol. ricini ℥i. omni mane.

5th, 6th, 7th.—The oil was taken each morning, which acted daily on the bowels; the water was still a little tinged with blood, but was voided without pain. At this time the tongue, which put on such a peculiar appearance at the commencement, now began to shew the papillæ, and, in three days, was quite clear, and the young man convalescent.

June 28th, on my return home from visiting William Glover, I was requested to see William Baylis, aged 19 years, who stated that he had, at the request of the damsel in the dram shop, taken half-a-pint of raspberry brandy, about four o'clock that evening; in about half-an-hour afterwards he became very faint, and vomited freely; he afterwards felt pain in his stomach and lower part of his bowels, with a frequent desire to void his urine. These symptoms had gradually become worse up to the time I saw him, when they were excessively urgent. On examining the ejected fluid, an immense quantity of the pulv. lyttæ was discoverable: ordered him to drink largely of sugar water and olive oil, which soon caused him to vomit freely. He afterwards drank plentifully of linseed tea.

29th, horâ 5, a. m.—Skin become hot; pulse, 96; great tenderness over the stomach, ureters, kidneys, and bladder; stran-

gury very urgent; urine very bloody; tongue much coated. V. S. ad ʒxvi. Capt. ol. ricini ʒiss. administ. enemata.

Horâ 10.—Bowels moved twice; considers himself easier; urine still scanty and bloody, and attended with great pain in passing through the urethra; pulse, 90.

Horâ 6, p. m.—Tenderness much increased; strangury more urgent; pulse, 110. V. S. ad ʒxv. Rept. ol. ricini et enemata.

Horâ 12.—Bowels acted on freely; pulse, 96; expresses himself much relieved.

June 29th.—Has had some sleep during the night; the castor oil and enema were administered early this morning, and produced two copious evacuations; tenderness much less; strangury less urgent; urine more copious, but bloody; pulse, 90.

30th.—Bowels open from taking castor oil; urine more copious and less bloody. Ordered to take the caster oil night and morning, which he did for four days; at the end of which time the tongue became clean, and he convalescent.

ARTICLE VII.

Midwifery.

BY MR. J. GREENING, SURGEON, WORCESTER.

June 27, 1827.—I was requested to call upon Mrs. O. æt. 35, of a spare habit. She complained of acute pains over the lumbar region, which were increased upon taking a deep inspiration, or from over exertion. The bowels were regular; she had not menstruated for the last five or six months; she believes herself to be pregnant; the palpitation of her heart is so strong, as to be visible; the carotid arteries are quickly pulsating. She had been troubled with this complaint for several years, and had taken the opinion of the best informed medical men in this part of the country, whose opinion was, that she should be occasionally bled. At times, she seemed to have lost the use of her arms; but, upon grasping any thing firmly, she was relieved. The pulse is regular and full; she is troubled with leucorrhœa. Fiat venæ sectio ad ʒxvi. Low diet.

28th.—The blood is buffed. She is better.

29th.—I saw her again about half-past nine, P. M. She had been with a person whom I delivered the day before, the best part of the day. After her return home, she was seized with acute pains in her bowels, coming on at intervals, like labour pains. There is no discharge. ℞ tinct. opii ɱxx. mist. camph. ʒiss. m. ft. Haust. statim sumend. Eleven o'clock.—The pains still continue.

30th, 1 o'clock, A. M.—A fœtus was expelled at the sixth month. The placenta was thrown off by the efforts of the uterus. The child was so small and feeble, that I requested the nurse to put it by, for I thought it could not possibly live. I am confident it would go into a quart jug.

July 1st.—She had a very restless night; she is thirsty; her bowels are costive. Sumat ol. ricini, ℥ss. Milk is secreted in her breasts. The discharge continues. The pulse is hard and frequent, not so full. The child is alive, and takes gruel.

9 o'clock.—The oil has operated; she is restless; the pulse is soft, and 80 in a minute; the skin is dry; there is much pain over the lower part of the belly and right iliac region; pressure gives pain. Ap. hirud. xii. part. affectæ. ℞ Liq. ammon. acet. ℥iss. Pot. nitrat. ʒi. Liq. antimon. tart. ʒiss. Aq. menth. ℥iv. ss. m. Sumat. coch. mag. iii. 4tis. horis.

2nd.—She is much better.

3rd.—She had occasional pains in the night. The pulse is 75; the tongue is clean; the skin moist. Capt. ol. ricini. ℥ss. statim. The child takes the breasts.

4th.—She is sitting up, and complains of nothing but weakness. The child improves.

31st.—Up to the present time they are both well. I again questioned her respecting the time when she last menstruated, and she assured me she had not since January.

April 30, 1830.—She engaged me to attend her again in her lying-in, which she expected to take place at the latter end of July of the present year.

June 13th.—I was sent for from Malvern, about three o'clock, p. m. She had been in labour for some hours. She was delivered at five o'clock. The labour was natural. The child was betwixt the seventh and eighth months, and very feeble. Brandy was administered to it, and the warm bath used. This child was much larger than the last, but the nails were wanting.

14th.—The child is living, and the mother is doing well.

The foregoing cases do not abound with much novelty; still it seems worth while to note the occurrence of two children born at so early a period of pregnancy, and both of them thriving and doing well. Dionis, Portal, Chapman, and other authors of a more recent date, who have written upon midwifery, have given numerous cases; but I do not remember any of them describing a case in any respect like these.

ARTICLE VIII.

Remarks on the Curability of PULMONARY CONSUMPTION, *particularly as regards the treatment of the disease by inhalation.*

BY CHARLES HASTINGS, M. D., WORCESTER.

If the sanguine expectations which have been entertained, at different periods of the history of the medical art, from its first rude and undigested state, of which we have records, to the present enlightened age, by those who have fancied they have discovered a remedy for pulmonary consumption, had been realized, how different would be the feelings under which we should now contemplate this formidable malady. Instead of the dark cata-

logue of instances which every medical man's experience will at present furnish, demonstrative of its frequent fatality, we might then have to record numerous examples where his aid had been instrumental in restoring many a promising and deeply interesting sufferer to afflicted friends. The bills of mortality would then no longer, year after year, continue to contain so appalling a proportion of victims to this destroyer of human life. A fifth part of the deaths in this country, would no longer be set down to the ravages of this unsparing disease. It would be vain to attempt an entire explanation of the circumstances that have led to the adoption of these sanguine expectations, by eminent medical men, because I am convinced that no rational account can be given of the delusion which has occasionally misled the brightest and most talented of men, in their earnest desire to forward the advancement of knowledge, and improve the condition of mankind: but in the case of the empiric, we meet with a ready solution of the problem; with him the "auri sacra fames" is quite sufficient to tempt him to induce, if he can, the credulous and ignorant, to believe that he expects to be eminently beneficial to the age in which he lives, by rescuing from the grave, many a lost case of consumption, that has been abandoned by the learned of the medical profession.

There can, however, I think, be no doubt that pulmonary consumption is a very vague and indefinite expression, and that, under this term, a great variety of affections has been classed, differing very considerably in their nature, and also in the degree of danger attending them. There are very few of the diseases to which the structure of the lungs, and other parts of the respiratory apparatus are subject, which do not, after they have continued some time, produce more or less of emaciation, and whenever this takes place, in conjunction with cough, the patient is said to be consumptive: but, how manifold are the changes of structure which may be taking place, so as to produce these symptoms? The morbid changes may be occurring in the larynx, the trachea, the bronchial membrane, the cellular tissue of the lungs, or the serous covering of the same. The mischief that is set up in these different parts, may be of an inflammatory, of an ulcerative, of a tuberculous, or of a malignant nature. What rational man, then, can, for a moment, entertain a hope that any *one* remedy will ever be discovered, that will be generally applicable to the treatment of what is called pulmonary consumption? By this common term, diseases, as different as possible, have been, and will continue to be, described; and so it will again and again happen, that new remedies will come into repute for the cure of this complaint, because they are indiscriminately tried in affections comparatively not at all fatal in their tendency, some of which get well under ordinary treatment, or sometimes under no treatment at all. But the experienced and cautious pathologist knows well that these are very different in their nature, from those serious and afflicting cases which no art can restrain from proving

fatal, and against which all our means are often powerless. Pulmonary consumption, in the extended sense in which the term is usually applied, is a disease which very frequently terminates favourably, and thus, those who profess to cure it, have this manifest advantage, that they undertake to remedy a disease much less formidable than is usually supposed: for the prognosis in pulmonary consumption, taken in this wide sense, is not very unfavourable. As far as my experience extends, a large proportion of persons thus affected, recover. But if we limit the acceptation of the term, and confine our views to those affections in which tubercles exist in the lungs, and produce the threatening array of symptoms, then the prospect is much more dreary. Even here, however, we find much more to encourage hope, than many are inclined to allow. Recent investigations have proved, beyond all possibility of doubt, that tubercles exist in the lungs, and go on to form excavations in this organ; that the excavations become sometimes in such a state of quiescence, and freedom from ulceration, that health is in a great measure restored. But has it been at all satisfactorily elucidated, whether any one remedial measure that can be mentioned, has power to bring about this favourable change? Whenever this very desirable termination occurs, is it not the result of the slowly repairing powers of nature, assisted by a long, patient, and attentive watching, and alleviation of the symptoms, rather than a positive effect, produced by any one medicine that has been applied?

Can, in fact, the mind contemplate the phenomena displayed in the pneumonic and general system, during the slow progress of tubercles, from their earliest commencement, till they ultimately absolutely annihilate the structure of the lungs, without being sensibly convinced that no one remedy can be supposed capable of restraining this disease in its various stages?

Of all the modifications of pulmonary consumption, the pneumonic complaints which occur at the beginning of the tuberculous, are the least alarming. Hence this species often subsists for a considerable time before it awakens the attention of the patient. This the rather happens, because the fever with which the tuberculous phthisis is attended at its commencement, is generally accompanied with high spirits. The tuberculous, however, is the most formidable modification of this class of diseases: so much so, indeed, that we are, perhaps, too apt to view, with a desponding eye, the very first threatening of this disease. Not so the unhappy victim to whom this season is, for the most part, one of hope and enjoyment. The early inroads which are made by this affection, do not, by any means, break in upon the intellectual or other pursuits of those individuals who are the subject of it, and who, frequently, are persons of highly cultivated taste, and enviable mental endowments. The cough, at the commencement, is hardly so considerable as to claim notice, while the extenuated habit, and loss of strength, with which it is connected,

are often ascribed to other causes. These slight appearances in a young person, are very threatening, if they, for any length of time, resist the ordinary means which are used in such cases, and more especially so if the relatives of the patient have fallen victims of pulmonary consumption. I am not aware, nevertheless, that, at this early stage of the complaint we are considering, any one plan of medicine, much less that any one remedy, can be mentioned as generally applicable to it. The circumstances under which these monitory symptoms arise, vary in different individuals so materially, that they call for a corresponding variation in the means of cure.

Shall we suppose that the like treatment is applicable in those where the above symptoms are attended with a highly inflammatory state of the habit, and those who are languid and have a feeble circulation? Let experience answer this question, and let us adduce from its records, instances, successful instances, and it will be apparent that these favourable results are not produced by any one mode of cure. I may, myself, be permitted to relate two or three examples illustrative of these remarks.

Case I.—Incipient Phthisis with inflammatory symptoms.

A young man, a butcher by trade, came to me January 8th, 1820, to consult me respecting a cough, which had continued for nearly three months, in spite of measures that had been adopted to remove it by a medical man. He said that, during the whole of the illness, he had been losing flesh. He was naturally of an inflammatory habit, and equal to much muscular exertion, but he had now become very weak. Towards evening, feverishness, and flushing of the cheeks, came on, and during the night, the skin was burning hot. In the morning, he occasionally perspired. There was pain in the centre of the sternum, which was increased by inspiration, and any increased exertion always brought on some degree of difficulty of breathing. The pulse was 96, hard and jarring; and the action of the heart, as felt between the ribs, was more forcible than in health. The cough was most troublesome during the night. The expectoration was not copious, but it had somewhat of a purulent appearance. The bowels were open. The urine was of a high colour. The young man could give no accurate account of the cause of the illness. The cough had come on gradually, without his being able to attribute it to any particular circumstance. He had been for some time under treatment, and had been once bled and blistered.

I determined to have my patient confined to two rooms, and, as there was evidence of much inflammatory action, ten ounces of blood were taken from the arm, and a large blister was applied to the chest. He was directed a pill, containing two grains of blue pill, and two grains of James' powder, with five grains of extract of hemlock, every night, and a mixture three times a day, composed of ten drops of tincture of digitalis, ten drops of tincture of colchicum, and an ounce of infusion of roses.

The blood which was drawn, appeared very much cupped and buffed, but the symptoms were scarcely alleviated by the treatment. The pulse remained hard and frequent, and the accession of fever, in the evening, considerable. As the symptoms were still indicative of inflammatory action, I directed, at the end of four days, six ounces of blood to be again taken from the arm, and an ointment of powdered cantharides and basilicon was applied to the blistered surface, to keep up a discharge. The pills and mixture were continued as before. The blood drawn on the second occasion, was nearly as much inflamed as the first, but the feverishness and the cough were not, for some days after the bleeding, much affected by it. He persevered, however, in the plan of remaining in two rooms, and also took the pills and mixture; the blister, likewise, discharged freely. Towards the end of January, there was some marked improvement in the case: the cough was not so troublesome; the pain was abated, and the evening fever came on less decidedly. As, however, there was still stricture across the chest, and pain, on deep inspiration, eight ounces of blood were again drawn from the arm, which had not so inflammatory an appearance as that which had been taken away on the two previous occasions. On the second of February, the mouth seemed to be affected by the blue pill, and he discontinued it, but still persevered in taking the hemlock and James' powder, and the mixture of roses, &c. The blister still discharged well.

After this time, I had but little trouble with the case. I kept the young man in the house until the month of May, when he began cautiously to expose himself to the open air, and, during the summer, gradually recovered his usual health. I am happy to add, that this was not only a temporary alleviation of symptoms. It has proved to be a permanent removal of disease, for he is now in good health, and, excepting occasionally suffering from cough when he has taken cold, there has been no threatening of the former attack.

Case II.—Emaciation; quick Pulse; Fever; Cough.

A farmer's daughter, aged 18, in the autumn of 1824, was placed under my care as a case of consumption. Her mother was in much distress, as she had already lost children in that disease. The young woman, who was pale and emaciated, complained of pain in the left side of the chest; she had a short tickling cough, and the pulse was 100, weak; the tongue was much furred, and, towards evening, the mother said, a good deal of fever and flushing made its appearance. The bowels appeared in an unnatural state; they were costive, and the motions very pale. The menstrual discharge had never appeared. The disease had come on gradually, and could not be referred to any particular cause. The patient had been for some time under medical care, but had not been relieved.

I directed five grains of blue pill, and five grains of aloes and myrrh pill, every other night; and ten grains of carbonate of soda, ten drops of tincture of digitalis, and one ounce of infusion of calumbo, three times a day. I also desired that the left side of the chest might be rubbed twice a day, with tartar emetic ointment, until pustules made their appearance.

The plan was adopted by my patient with great assiduity, and she was also confined to two rooms, temperature 60°. It was not speedily that any material change took place, but, at the end of a month, she was better, and great advantage seemed to be derived from the tartar emetic ointment, which produced very decided counter-irritation. The bowels, also, were brought into a much more natural state, and the pulse had come down to 80 in a minute. As the improvement had been so considerable, I entertained great hope of further progress, by a continuation of a similar plan, and, on this account, I advised a seton to be inserted in the chest, and one drachm of the alkali of Brandish, to be given in fresh beer, three times a day; and also advised her to take animal food daily. The result of the case was very satisfactory. She became better, and the cough nearly subsided; indeed, she recovered, so as to enjoy tolerable health. She, however, is far from strong, and it is only by constant care and attention, that my patient has been prevented from again becoming a decided invalid.

Case III.—Incipient Phthisis; Amenorrhœa; quick Pulse.

A young lady, aged 18, was placed, by her mother, under my care, in December, 1826, for a cough, which caused great anxiety to her parents, as they had already buried two daughters who had been affected with consumption. The young lady was particularly pale, and the extremities were very cold; pulse 100. There was a good deal of quickness in breathing, and particularly after even slight bodily exertion. The cough was dry and hecking, and was always excited by deep inspiration. The bowels were inactive, and menstruation had been absent for six months. There was no evening fever nor night perspiration. She had emaciated since the illness first commenced. No medicines had been taken. I desired that a large blister might be placed upon the chest, and prescribed five grains of aloes and myrrh pill every night, and one ounce of Griffiths' steel mixture twice a day. I allowed the young lady to take animal food, but strongly advised that she should, during the winter, be confined to the house, and thus avoid all risk of taking cold.

The result of this plan was very salutary. The uterine functions were restored at the end of three weeks; after which, the cough subsided, and the pulse became slower. My patient continued in the house until the spring, when she was admitted, cautiously, into the open air, and took horse exercise, which had a very beneficial effect in restoring her strength. During the following summer, her health became more restored, and she has,

ever since that time, by living carefully and avoiding sudden changes of temperature, gone on pretty well, although there is still a considerable susceptibility to cough, from any imprudent exposure to the cold air.

Observations.—I have grouped the three foregoing cases together, because they appear to me to shew very clearly, that the early symptoms threatening pulmonary consumption, may be successfully combated by measures differing very materially in their effects upon the system. For example, what can be more opposed in their effects on the body, than the blood-letting, and other evacuating remedies employed in the first case; and the steel, and generally tonic plan adopted in the last: and yet, in both of these cases, consumption was threatened, and the further inroads of the disease apparently prevented, by the very different means before specified. With such facts as these before us, to which might be added hundreds of others of a similar nature, from the experience of others, how vain appears the hope that, by any one remedy, we can ever expect to stay the progress of this insidious disease. I am aware that some persons may not be disposed to admit that tubercles were present in the lungs in the foregoing instances, on account of the favourable issue of them; but I confess that it has so often fallen to my lot to witness the subsidence of the most threatening phthisical symptoms, in their early stage, that I am by no means sceptical as to the fact of the irritation in the lungs, accompanying tubercles in their early stages, being under the control of medicine; nor do I see reason to doubt that, by proper management, persons with tubercles in that important organ, often pass through life, and take an active share in its pursuits. We have it not often in our power, it is true, to demonstrate, by anatomical evidence, that such symptoms as those which were present in the above cases, are dependent upon tubercles, because, at this early stage, they never hardly prove fatal, and, unless death occurs from some other cause, this important addition to the evidence on which we formed our opinions, is not afforded. Where, however, the opportunity occurs of putting to the test the truth of these speculations, they will, in most cases, be found to be legitimate. I shall adduce the following example, where symptoms existed, not at all more characteristic of tuberculous consumption, than those in the cases I have before related; in which the patient, who was apparently in the first stage of consumption, was seized with fatal peritoneal inflammation; and the opportunity was taken of ascertaining the state of the lungs, which corresponded in their morbid appearance with the previous opinion formed from the symptoms.

Case iv.—Incipient Phthisis; death from Peritoneal Inflammation.

A young man, aged 20, of a consumptive family, was brought to me on account of a slight hecking cough, quick breathing on exertion, and loss of flesh; pulse 90. His friends were alarmed

about him, as he had been for some time unequal to his accustomed exertions, and was not so cheerful as usual.

I took a serious view of his case, and put him upon such a plan as I thought desirable; but he pursued it but for a short time, for, without any cause to which he could trace the attack, he was taken with symptoms of abdominal inflammation, which, in spite of the adoption of early and vigorous measures, proved fatal. I examined the body very carefully, and, in addition to the usual appearances in the cavity of the abdomen, which are ordinarily produced by peritoneal inflammation, the seeds of fatal disease were found in the lungs.

The pleura, in general, was not much affected, but at the superior lobes of the lungs, adhesion had taken place, between the costal and pulmonary pleura. Interspersed, in the cellular structure of the lungs, were a number of small, white, miliary tubercles, and the cellular structure of the lungs surrounding them, was, for the most part, thickened, and had the appearance of being inflamed. These tuberculous deposits were, by far, more numerous in the superior lobes, than in other portions of the lungs. Indeed, in the superior lobes, they were, in some points, beginning to coalesce, and to form conglomerated masses, but in none of these accidental productions was there any disposition to softening observed.

We will not confine our remarks upon the cure of consumption, to the early period of this malady, but go on to shew that, in the more advanced periods of it, where the tubercles have softened and cavities are formed, we are still not to view the disease as incurable, but we shall find it, occasionally, going on to a favourable issue, under the use of remedies varying in their effects upon the system.

As the disease proceeds to this more advanced period, the symptoms are usually much more decidedly developed. The cough becomes more severe, and more decided hectic follows in the train of symptoms. But when the disease has reached this more advanced stage, there is great diversity in the intensity of the symptoms which characterize the different species of pulmonary consumption, so much so, that from them alone it is difficult to form a decided conclusion as to the real state of the lungs, or to form a correct judgment whether the patient is really suffering from the slow progress of tubercles, and the inflammation of the cellular texture of the lungs almost necessarily attending their growth in this organ; or from some other modification of diseased lungs, as chronic bronchitis, or chronic peripneumony. But the aid which we are now enabled to derive from auscultation and percussion, frequently puts it in our power to settle this important point, and to say at once whether the patient is suffering from tuberculous consumption. For if the tubercles have softened, and an excavation has been formed, we have then the sign of pectoriloquism, which, in addition to the pulmonic and general

symptoms that almost constantly attend pulmonary consumption, cannot fail to convince us of the real nature of the disease with which we have to contend. But, having so ascertained this all important point, does the physician find there is any one specific mode of treatment? Does not the state of the system under such a condition of the lungs, vary materially; at one time inflammatory action being strongly developed, and at another, in a much less remarkable degree? Is there not, still, in many instances, a degree of langour and general debility, that more than any other circumstances attract attention, and, in short, a perfect freedom from all inflammatory action? Are all these cases to be treated on the same plan?

The experience of ages contradicts such a supposition, and we, accordingly, find patients occasionally recovering at this period of tuberculous consumption, under different treatment. I shall relate a few examples, which may bring this question more explicitly before the reader.

Case v.—Tuberculous Phthisis, terminating favourably.

A gentleman, aged about 40, came to me in the autumn of 1826, for my advice respecting his health, which had been declining for several months, during which time he had been affected with a cough, which, for some time past, had been attended with a thick muco-purulent expectoration, and this, at times, had been tinged with blood. The pulse was 110; the tongue furred, and there was considerable tenderness in the epigastrium and right hypochondrium. Two or three times during the twenty-four hours, he was subject to paroxysms of fever, and during the night he had rather copious perspirations. He also told me that, since his illness, he had become considerably thinner, having been originally a stout, athletic person. I examined the chest attentively, and found the sound, on percussion of the right side, to be natural; but on the left side, throughout nearly its whole extent, the sound was more dull than it is usually heard. With the stethoscope, I observed that the respiratory murmur on the right side of the chest, was natural, but on the left, it was very far from being so, as a good deal of rattle was heard when the stethoscope was applied at the middle of the left side of the chest; but under the clavicle, and for some distance below it, pectoriloquism was very distinctly discovered.

The case was now clearly made out, and, under the formidable symptoms before detailed, I considered he must sink. He had been advised to quit his native land, and seek a more genial climate: but to this he was disinclined, and I rather wished him, in preference, to be confined to an uniform temperature, 60°, in his own house. To this he agreed, and I prescribed for him leeches to the epigastrium, and afterwards tartar emetic ointment to be rubbed into that part, until a full crop of pustules made their appearance. I also advised him to take two grains of blue pill, and three grains of extract of hemlock, every night, and a

mixture composed of tincture of digitalis, tincture of colchicum, and infusion of roses, three times a day.

I saw him again in about a fortnight, but he was then not materially relieved. He did not cough so much, but in other respects was not better. I again convinced myself, by examination with the stethoscope, of the existence of a cavity in the superior lobe of the left lung, and directed a seton to be inserted immediately above the left breast. His plan of medicine was continued as before.

The termination was favourable. He persevered in the measures recommended, until the gums were affected slightly, when he omitted the blue pill, and took the hemlock alone. He did not leave his house until the month of April in the following year, and his cough was then very much abated. He also had gained flesh. The seton was not removed for several months afterwards. The cure, in this case, was very complete and permanent, for I casually met this gentleman a few months ago, in perfect health, looking plump and ruddy. He told me that he had been for a long time in strong health, capable of much fatigue, and leading a very active life.

Case vi.—Tuberculous Consumption, terminating favourably.

A young woman, aged 25, was brought to me with frequent cough, copious muco-purulent expectoration, emaciation, pain in the left side, hectic fever, and night perspirations. Pulse 100; tongue furred. On examination with the stethoscope, I discovered pectoriloquism on the upper part of the right side of the chest. The respiratory murmur in other parts of that side of the chest, was natural. There was no pectoriloquism on the left side of the chest, and the respiratory murmur was distinctly heard. By percussion, the sound on the right side of the chest was dull; on the left side it was natural. The prognosis in this case appeared to me to be very unfavourable; but still, as the tuberculous excavation was confined to the right side of the chest, I did not wholly despair of a propitious termination. The situation of my patient for treatment was very unfavourable; her house, being little better than a cottage, did not admit of the adoption of an uniform temperature. I directed a blister to the chest, and gave her a pill, containing three grains of hemlock and half a grain of ipecacuanha, three times a day, with a draught of ten drops of tincture of colchicum and an ounce of infusion of roses.

As soon as the blister had healed, another was applied, and thus, for some weeks, a constant discharge was kept up from the surface of the chest. In about twelve days after the commencement of this plan, there was some amendment as respected the cough, but the febrile symptoms did not diminish. By perseverance, however, the other symptoms were also alleviated, and after remaining quiet, and living upon a milk diet, and taking the extract of hemlock three times a day for nearly six months, during the whole of which time a succession of blisters was

applied, I had the pleasure to see her nearly convalescent. So much so, that soon after that time, she began to regain her flesh, and, by degrees, acquired pretty nearly her usual degree of strength. I have not seen this young woman for some time, but I believe she remains well, excepting that on sudden exposure to cold, she is liable to return of cough.

Case vii.—Phthisis repeatedly relieved.

W. W. aged 28, was received into the Worcester Infirmary, on the 4th of April, 1829, labouring under cough and copious muco-purulent expectoration, pain in the chest, hectic fever, night sweats; pulse, 66; tongue, clean; bowels, costive; urine, high coloured. He had been ill three months, and the symptoms had come on gradually. He had leeches, and a blister applied to the chest; he also took a mixture of colchicum and digitalis, three times a day, and with each dose, a pill compounded of one grain of blue pill and one grain of extract of henbane.

He was not relieved by these means; on which account, on the 19th of the same month, he was ordered one drop of prussic acid, to take in barley water three times a day, together with a linctus for the cough.

This seemed to have the effect of diminishing the cough and expectoration, and he continued the acid and the linctus until the 14th of May, when he complained of great lowness and exhaustion, especially after taking the prussic acid. The acid was omitted, and a cardiac mixture was taken instead of it. On the 18th of May he was discharged cured.

He was, however, readmitted on the 11th of July, having had a return of all his symptoms after exposure to cold. He tried purging, leeches, and alterative doses of blue pill, without any relief to the cough, expectoration, and fever. On the 17th, the prussic acid was again prescribed for him as before, and four grains of extract of poppies to be taken when the cough was troublesome. Relief again soon followed the use of this remedy, and he was discharged, nearly well of all his symptoms, on the 1st of August.

On the 29th of the same month he again came to the Infirmary, in consequence of a return of the troublesome attack. Leeches and a blister, and the free use of large doses of tartar-emetic mixture, were now tried, as well as extract of henbane and extract of hemlock three times a day, but they failed to produce any essential alleviation of the symptoms. The prussic acid in barley water was again given, and was followed with so much relief, that my patient was soon afterwards discharged from the Infirmary convalescent. I have not heard of him since that time.

Observations.—The method of cure having been materially different in the three foregoing cases, I shall beg to offer a few remarks on the different remedies which seemed to have a beneficial result. In the case of the gentleman which is related first, mercurial action appeared to exert a salutary influence upon his complaints, for

soon after the gums were affected, the cough subsided. I know there is, in many persons' minds, a prejudice against the use of mercury in tuberculous consumption; and I admit the use of this remedy requires considerable circumspection; yet, under proper restrictions, mercurials have often a manifestly good effect. In all instances where the chronic inflammatory action, accompanying the tuberculous degeneration, is of a marked character, we need not dread the effects of a cautious use of mercury. We know that, in examinations after death, the cellular texture of the lungs surrounding the tuberculous excavations, is often, for a considerable space, found inflamed and thickened; and where the tubercles are not numerous, the removal of the inflammatory condition of the surrounding portions of the lungs may go far towards removing the symptoms with which the patient is affected. That mercurial medicines give relief in chronic inflammation, is now generally admitted; and, on this principle, I conceive they are occasionally useful in cases of tuberculous consumption. But they also have another satisfactory effect. It is by no means uncommon for the digestive organs to be disordered, in conjunction with tuberculous affection of the lungs, and in such cases we may have recourse to gentle salivation with the happiest effect; the irritation of the lungs being lessened, as the functions of the digestive organs are restored.

Colchicum and digitalis were given conjointly in all these instances; and in the two first, seemed to answer the purpose for which they were given, by lowering the frequency of the pulse, assisting the secretions from the bronchial membrane, and diminishing the cough. I am in the habit, almost constantly, of employing this combination in pulmonary affections; and I have reason to believe it is one that is well calculated to relieve, where chronic inflammation of the bronchial membrane is going on, which it almost always is, in connection with tuberculous disease. Like all other remedies with which we are acquainted, its curative effects are within narrow boundaries, and those who expect too much from it, will be inevitably disappointed. In the last of the three instances which I have related, it did no good, although the bronchial membrane was manifestly much affected. In this case the prussic acid came to our aid, and, happily, had the desired effect, in giving complete relief to the unfortunate sufferer. Nor was this a mere casual occurrence; for, on every succeeding relapse which has happened to the patient, the prussic acid has exerted the same decided influence upon the state of the bronchial membrane, relieving the cough and difficulty of breathing. Prussic acid has had its day of repute in these affections, and is now not very much thought of by the profession, its extreme uncertainty of operation making it very objectionable. There are, however, instances of bronchial inflammation in which we may firmly rely upon it; but I know not that any very exact rule can be laid down with regard to the circumstances under which it is useful. All I can say with certainty is, that in obstinate pulmonary af-

fections, which resist other remedies, I occasionally see it do good. In some of the cases in which I have seen it signally beneficial, dyspeptic symptoms have been combined with the pulmonary affection, and I have been inclined to think that the cough, and other symptoms, have abated as the prussic acid improved the state of the stomach. In one case I more particularly made this remark, where dyspepsia was combined with bronchial disorder, which assumed an asthmatic character: after a variety of remedies had failed, the prussic acid restored the functions of the stomach, and the embarrassment of the respiratory functions soon afterwards gave way. It has never occurred to me to witness any fact which induced me to think, as some zealous persons have affirmed, that this acid has any power in curing tuberculous ulceration.

The loss of blood, generally and locally, was had recourse to cautiously in the foregoing instances, and with a due regard to the degree of strength, and the inflammatory nature of the symptoms. But in these, as in most other prolonged affections of the pulmonary system, less reliance was placed in the loss of blood, than in the various means of counter-irritation which respectively suggested themselves. These were blisters, tartar-emetic ointment, and seton. The latter appears to me to be the most effectual means of counter-irritation, because its operation is continual, and it does not prevent us from having recourse to topical bleeding, and blistering also, whenever any renewed accession of symptoms renders it necessary to put them in practice.

It may here also be right to advert to the degree of exposure, in respect to vicissitudes of temperature, which the patients suffered. In only one of them, viz. the first related, were we enabled to preserve any thing like an uniform temperature in the apartment during the progress of the cure. Without denying the paramount importance that should be attached to a proper regulation of the temperature in the sick rooms in which pulmonary patients are confined, where the circumstances of the individual are such as to admit of so necessary a part of the treatment being complied with, it is yet consolatory to think, that the most unpromising cases of this nature may sometimes be brought to a happy termination, where the station in life, of the person so affected, does not admit of the temperature of the house, in which the patient resides, being so regulated. The second of the cases before related, was of this nature. The last also was of this kind, as the man was in the ward of the Infirmary, where, from the mixture of the pulmonary cases with those of general disease, no fixed rule, as to the regulation of temperature, could be adopted.

I may here hazard a remark with respect to the influence of change of climate in pulmonary consumption. Where the disease has arrived at its second stage, it is scarcely ever desirable; and in all the instances in which I have seen it tried, no benefit has arisen from the change. At this period of the complaint, much more benefit may be expected from residing at home, under pro-

per medical care, and with the advantage of rooms of a judiciously regulated temperature, than from the invalid travelling in this very infirm state to some distant land, where, perchance, he may find as many victims to his disease, falling around him, as he witnessed in his own country.

Having adduced cases illustrative of my remarks upon phthisis in its first and second stage, I shall just go on to a statement of the symptoms which appear when the disease is drawing to a close, in order to have an opportunity of relating one instance of this kind which terminated favourably.

After the hectic fever has continued for some time, a new set of symptoms arise: one of the most obvious of these, is wasting or emaciation of the habit. The emaciation, in fact, commences in every form of phthisis in the early stage, but after the hectic fever has subsisted some time, the emaciation is very much increased.

The tongue, as the disease proceeds, is affected with aphthæ, and consequent ulcerations. About the same time, often occurs very distressing diarrhœa, not unfrequently hastening a fatal termination of the disease. But in this last stage, the most afflicting, and most rapidly exhausting, of all the supervening symptoms, are colliquative sweats, which produce but little relief from fever. On the contrary, an evident increase of weakness and langour is very generally the consequence of their being long continued and profuse; and this equally happens whether they be extended over the whole body, or confined to particular places. These colliquative sweats, even when the most profuse, are not unfrequently confined to the head and shoulders; and when this is the case, the progress of the disease to a fatal termination, is usually the most rapid.

With these supervening symptoms, and the continuance of the hectic fever, it is by no means surprising that the disease, after arriving at this state, should, in almost every case, have a fatal termination. Yet we are not devoid of cases of this hopeless nature, where things have taken a favourable turn; but this change is not, I fear, to be attributed to the medical art. The following may be adduced.

Case VIII.—Phthisis in its last stage, terminating favourably.

I was requested to see a post-boy, who had been long ill with cough, and had emaciated considerably; I found him, as I thought, in a hopeless state from pulmonary phthisis. He was a victim to the dark catalogue of ills which characterize the last stage of that complaint. His emaciation was extreme. He had, alternately, colliquative diarrhœa and profuse sweating. The mouth was aphthous; the cough harassing, and the expectoration profuse. The ankles were œdematous, and the countenance pale and cadaverous. The breathing quick and laborious. The disease had come on insidiously. I regarded it as a lost case, and so spoke of it to the friends, ordering merely a mixture of

chalk and laudanum to restrain the diarrhœa; and after visiting him a few times, abondoned him to his fate. To my no small surprize, the man recovered by continuing the chalk mixture, and has resumed his station as a post-boy, which employment he has continued for the last three years: but there is manifestly still existing great mischief in the lungs. His breathing is short, and he is never without a cough; moreover, his appearance is cadaverous, and gives proof that he is still a prey to some disorganizing process in the important viscera of the chest. Notwithstanding all this, he has so far recovered as to be able to follow his avocation, and is exposed to all the hardships which attend the life of a post-boy.

What shall we say, then, of this case? Is chalk mixture a *cure* for pulmonary consumption in its last stage?

I have been anxious to put upon record the cases above detailed, illustrative of the various means under the use of which persons affected with pulmonary consumption occasionally come round, and get into tolerable health; before entering upon any consideration of the benefits which sometimes arise from the inhalation of various medicated substances in these affections of the lungs. This practice appears to me to be little more than a revival of the plan of treatment recommended by Christophorus Benedictus, in his Theatrum Tabidorum, and concerning which we find, in Mead's Monita et Præcepta, the following apposite remarks: "I must observe that fumigations with balsamics, such as frankincense, storax, amber, benzoin, in order to correct and sweeten the acrid and salt humours, is of vast service in some cases: which is to be done by throwing the ingredients on red coals, and receiving the fumes through a proper tube directly into the windpipe and lungs. I am very sensible that this method of administering balsamics, is almost entirely neglected as useless. But whosoever considers the length of the way which they must make by the blood-vessels, before they reach the lungs; and what a small part of them comes to the place of their destination, will easily see that this is the best way of communicating their virtues, if they have any.

"For the same reason, I have known the smoke of balsam of tolu, sucked into the lungs through a proper tube, as we smoke tobacco, to be of signal benefit, especially in spitting of blood." p. 58.

As this part of the treatment of this afflicting class of diseases has lately been again brought before the public, as if it were something new, and seems likely to be again supported with all the enthusiasm which distinguished the early trials of Dr. Beddoes, with his factitious airs, I shall take leave to dwell upon this consideration, and to offer a few remarks on a work which has lately appeared, from the pen of Mr. Murray, an operative chemist, who has fairly entered the lists as a competitor for medical renown, and claims no small share of credit for having

become the promulgator of a remedy (chlorine gas) for consumption; through whose agency the sum of mortal misery is to be abridged, and the cause of humanity served. I wish not here to be accused of saying this in raillery, for praise is justly due to Mr. Murray for his philanthropy; but I fear the scrutiny to which his remedy will be submitted by the medical world, will be such as to shew that he has much overrated the importance of this addition to the remedies for consumption. He says, in his advertisement, "we have ventured, in the following pages, to submit to the medical world, some considerations on the cure and prevention of pulmonary consumption, in the firm belief that this good has been achieved: there is nothing empirical in the case, but the plan proposed is based on the solid principles of inductive truth. The ratiocination seems altogether indisputable, and the question set at rest by the evidence of facts adduced in its favour—founded on reasonable deductions and correct analogies. Accident has had no part in this discovery; it is the immediate deduction, ab initio, we humbly conceive, from the soundest principles of legitimate science. The annual drain on the population of the British empire, in the sacrifice of so many lives, and those generally the worthiest of human nature, and at the most promising age, is appalling; and we could not be insensible to an appeal that has wrung so many bosoms, nor refuse our contributions towards elucidating the cure of a disease that has claimed so many victims to swell the amount of her triumphs."

But Mr. Murray's favourable opinion of the remedial agency of chlorine in pulmonary consumption, does not rest on his own experience only. He says he should be ungrateful if he omitted his special acknowledgements to his much-esteemed friend, Richard Hughes, Esq. surgeon, of Stafford, to whose kindness he was much indebted, and whose anxiety and readiness to second his endeavours to combat this disease successfully, he cannot laud in sufficient terms. Mr. Murray afterwards quotes Mr. Hughes' letters to him, in which the latter gentleman relates the results of his practice in several instances. Mr. Hughes says, "I can no longer delay to relate what poor particulars my memory will supply me with, though I fear my statements will be much too vague to make a successful stand against the incredulity with which a *remedy* for consumption will have to contend."—He afterwards proceeds to the detail of his cases; the first of which was a young man of the name of Pichin, who, it is said, at first got well from inhaling chlorine, and remained well for some time, but, in the month of November, caught cold at a wake, and then obstinately refused again to inhale, notwithstanding the strenuous endeavours of his friends to persuade him to do so; rather preferring the prescriptions of an itinerant quack Doctor, to the remedy which had before cured him. He died about Christmas. The sister, however, of this young man, was threatened with consumption, and inhaled the gas with much advantage, so that she became quite well. A girl, also aged 17, who was supposed

to have an ulcer in the larynx, and had attacks of loud spasmodic cough, which was twice cured by inhaling chlorine, after other remedies had failed. Another case is thus related: "the young lady I took you to see at the house of the draper, and who began to use the gas and oxymur. potassæ, under your directions, got quite well in about six weeks. I have seen her frequently since, and only three days ago heard that she continues well. The change in her appearance is most striking. You beheld her a pale, slender, delicate girl; her countenance apparently too pure and transparent for flesh and blood; panting on the least exertion, and working the alæ nasi at every breath; attempting to sing, and completely in character, Pope's 'Vital Spark.' She is now plump and strong; her face bronzed by exposure to the air; her voice full and loud; in a word, she is in vulgar health. She warmly expressed her gratitude, when last I saw her, with wonder at the change. To assist your memory, it will be well to state, that when you saw her she had frequent short cough, febrile action, swelled ankles, and night perspirations. I do not fully recollect if she spat blood."

A young married woman had the usual symptoms of Phthisis, with evident indication of tubercular deposit, ascertained both by percussion and the stethoscope. The gas, aided by counter-irritants, sedatives, and aperients, has nearly, if not quite, restored her to health.

Mr. John Hall, of Apeton, a member of a very consumptive family, was given over, as a case of consumption, by an old and able medical man. The indication of diseased lungs, by percussion, was very striking. There was no other disorder but phthisis, and he was evidently sinking. Mr. Hughes immediately gave him potassæ oxymurias, and ordered him to inhale the gas. He went home much better in a fortnight, and in six weeks was so well as to discontinue medicines. He, however, had a return, and again used the remedies, with success.

The next case was a young woman, who had a rapid pulse, cough, humid respiration, and spoke only in a whisper. She had pain in the chest, and a very obtuse sound on striking the sternum between the upper part of the mammæ. She was compelled to move about very slowly, and could only count four or five at a breath. At the end of six weeks all these alarming symptoms had subsided. In this case the nitrous acid and oxymuriate of potassa were, with occasional aperients, the only medicines used.

The last case related is considered not the less interesting, in that it terminated fatally; since the death was fairly attributable, like Pichin's, before stated, to the disuse of that which might have prevented it, after decided benefits gained by the employment of it. This was a young married woman, of a highly consumptive diathesis, who, after giving birth to a child, laboured under extreme shortness of breath, cough, and expectoration. Antimonials and a moderate bleeding had subdued inflammation,

and the nitrous fumes were afterwards used. She was an imprudent woman, and for months Mr. Hughes was mortified to find that, when nearly well, neglect and imprudence lost her all the advantage she had gained. So that, although she mended, she did not recover; and, again becoming pregnant, she died of consumption, having, three days previously to that event, given birth to a six-months child.*

The above eight cases, although defective in many of those particulars which are necessary to enable us to form an accurate opinion of their exact nature, still are interesting, and demand consideration. I would first observe, that of these eight, two cases eventually proved fatal; and it would appear to me that in neither of these could any good effect be attributed to the remedy, for the relief which appeared to occur from the use of the chlorine gas, was not at all greater than happens under the most ordinary treatment, as nothing is more common than great apparent temporary abatement in the symptoms, during the progress of phthisis, from the use of the sedatives and counter-irritants that are daily employed by the profession.

In the cases in which chlorosis was combined with the incipient symptoms of tubercular consumption, it is certainly fair to attribute as much benefit to the remedies which were used at the same time with the chlorine, viz. steel, bitters, and aloes, as to the gas itself. Two of the cases were of this kind. In the young married woman, whose symptoms were threatening, the chlorine was aided by remedies that are of themselves very powerful in such cases, viz. by sedatives, counter-irritants, and aperients.

Mr. Hall's case, of Apeton, would not strike me as a case of tubercular consumption; there is no evidence that it was any thing more than chronic pleurisy, which we often observe end favourably.

Another was, according to the opinion of Mr. Hughes, a case of disease of the larynx, and consequently should not be set down as a cure of tubercular consumption by chlorine gas.

The young woman who had a rapid pulse, cough, humid respiration, and spoke only in a whisper, got well under the use of the chlorine only, but the account of the symptoms is not sufficiently definite to enable us to say whether it was a case of chronic bronchitis or of tubercular consumption. The result then to which I have come, in my meditations on these eight cases, is that there is no *proof* in them of the particular efficacy of chlorine gas as a remedy for *tubercular* consumption.

But it would not be fair towards the zealous author, who is so anxious to bring fairly before the public the efficacy of this supposed means of curing tubercular consumption, if we neglected to make trial of it, which has been done in a few cases at the Worcester Infirmary; and of these it is my intention to record the particulars, as taken, by my pupil, at the time. First,

* Murray on Consumption, p. 147.

however, I will transcribe the directions given by Murray, as to the mode of using the remedies he recommends.

"In the administration," observes the author, "of both chlorine and nitrous acid gas, considerable caution will be required. All metallic furniture must be discarded; even gilded surfaces will be acted on by chlorine; and coloured hangings, &c. may be bleached, especially if damp: a moist atmosphere will thus especially promote this action. The room, therefore, whither the patient retires, had better be entirely emptied of its furniture, and devoted to this exclusive purpose.

"If a portion of peroxide of manganese be put into a small basin or tea-cup, and muriatic acid poured over it, and the ingredients, mixed together, be suffered to float in a vessel of tepid water, chlorine gas will be disengaged and impregnate the atmosphere. The proportionals of the peroxide and acid must be according to the size of the apartment, and the strength of the patient to bear it: thus it may be from a quarter to an ounce of the former, and two or more fluid ounces of the latter. The patient must enter this apartment several times a day, and each time remain so long as not to be painful or oppressive, and the quantity of impregnation must be insufficient to excite cough or irritate the lungs; two or three minutes at a time, and repeated five or six times a day, will be sufficient: the physical strength and progress of the disease, in fact, circumstances and feelings, must determine these points."

At page 138, the writer also says, "We have been accustomed to administer nitrous acid gas in pulmonary consumption, in the following simple manner:—a small quantity, to the amount of one or two ounces of red-fuming nitrous acid is poured into a wide tumbler glass, and the patient sitting in the current of the vapour, in the act of escape and diffusion into the atmosphere, at about eighteen inches, more or less apart from the glass, according to circumstances, the vapour will soon be felt, and at no distant interval an evident amendment will attest its efficacy and proclaim its value. The patient may remain two or three minutes at once, and repeat the experiment four or five times a-day, as may be convenient and agreeable. At the close, a bladder may be put over the glass, which will retain the vapour and preserve it for further use.

"We have exhibited the chlorate of potassa in doses of four to eight grains, two or three times a day. It is needless to add, that both these exhibitions must gradually decline in frequency as the patient recovers." And he elsewhere remarks, "From repeated experiments made on ourselves, with chlorate of potassa, we eventually discovered the very agent which was so much the object of our search—one that would allay febrile excitement and subdue inflammatory action, and yet leave the strength of the constitution unimpaired."

Before proceeding to record three cases, in which I employed the chlorine and chlorate of potassa, in the Worcester infirmary,

I will state the circumstances under which I employed them unsuccessfully in one private case. A young lady who had been subject to diarrhœa and pain in the abdomen, became affected with loss of voice, pain in the region of the larynx, and troublesome cough, with expectoration. After leeches and blisters had been repeatedly applied, without much benefit, I determined on using the vapour of chlorine and the chlorate of potassa, as above recommended. The young lady, from the first two or three trials, found it relieved the troublesome cough, and diminished the pain in the windpipe; but the relief was very transitory, and the remedy, after successive trials, was at length given up, without any advantage from its employment, and the young lady has since fallen a victim to the cruel disease.

Case ix.—Bronchitis; enlarged Heart; incipient Phthisis.

Sept. 25th, 1830.—John Milman, æt. 34, was admitted as an in-patient of the Worcester hospital, labouring under the following symptoms.

Complains of cough, with muco-purulent expectoration; dyspnœa; stitching pain in the left side frequently; occasional sudden increased action of the heart; soreness in epigastrium, when taking an inspiration; cephalalgia very violent, accompanying, in general, the increased action of the heart; tongue furred; bowels open and regular; pulse 64, soft; has lost flesh considerably; very weak; countenance sallow and slightly flushed; occasionally towards night it becomes more flushed; health in general, good; appetite variable; disagreeable taste in the mouth of a morning; ill four months. The attack commenced first with cough, followed by attacks of cephalalgia and fever.

26th.—V. S. ad ℥viij. Sumt. pil. ant. co. i. o. n. ℞ vin. antim. ♏xv. dec. hord. ℥i. m. sumt. 4tis. horis.

27th.—Felt much relief from the bleeding.

28th.—℞ Potass. chlorat. gr. v. Aq. distill. ℥i. ft. haust. ter die sum. Inhalt. vapor. chlorin. semel quotidiè.

Oct. 2nd.—Inhaled the chlorine vapour for three minutes. It produced a fit of coughing, with a tickling sensation down the trachea. Slight nausea. He coughed very considerably afterwards. There seems to be a considerable degree of irritation.

3rd.—Had a violent fit of coughing, and expectorated much yesterday evening; but he has coughed less to-day, and passed a better night. His breathing is somewhat relieved.

5th.—Feels himself much improved.

6th.—Cough much better; expectoration the same; action of the heart very much diminished. Feels a soreness inside the chest, brought on by the coughing at the time of inhaling the vapour. Pulse very quiet; bowels open; tongue clean.

10th.—Has been very well since the last report. Complains now of cephalalgia, which came on after inhaling the vapour.

11th.—Omitt. vapor chlorin. Cephalalgia very severe; tongue cleaner; bowels open. Complains of fullness in epigastrium; pulse 60, full; urine very clear.

12th.—Is much the same; urine last night was very thick and white; it is clear this morning.

14th.—Cephalalgia continues; cough worse; troublesome tickling sensation in the trachea.

17th.—Complains of tightness at the lower part of the thorax, at the ensiform cartilage, with fullness in the epigastric region. Applic. emp. lyttæ pectori.

19th.—Has more pain and tightness across the chest. Breath more embarrassed.

21st.—Blister discharges freely; cough very violent; tongue furred. On examination with the stethoscope, the respiratory murmur was clear and healthy; action of the heart violent and diffused; no pectoriloquism; lies on the right side always, for if he turns on the left, it brings on increased action of the heart, and sometimes pain.

Case x.—Chronic Pneumonia.

Oct. 2nd, 1830.—Edwin Williams, æt. 21, complains of cough, slight expectoration, dyspnœa, tightness across the chest, tenderness in epigastrium, occasional palpitation of the heart. Appetite bad; tongue furred; bowels open, and regular; pulse 88, quiet; feet always cold. Attributes his illness to cold. Ill nine months.

℞ Potass. chlorat. gr. vi. aq. distill. ℥i. M. sumt. ter die. Inhal. vapor. chlorin. semel quotidiè.

4th.—The chlorine vapour produced no fit of coughing, nor any peculiar symptom.

5th.—Says that he has not coughed so much; feels more looseness in his trachea.

6th.—Cough much less; expectoration more copious; more looseness, and comfortableness in the chest. Tenderness in epigastrium relieved; bowels open; tongue furred; pulse 92, quiet.

7th.—Coughed a great deal after inhaling the vapour yesterday, as it was much stronger. Had a pain in the head, and soreness in lower part of abdomen.

10th.—Feels better; cough improved.

11th.—Cough better; expectoration less; dyspnœa relieved; tongue furred; bowels open.

14th.—Does not feel quite so well; complains of pain in chest. Applic. emp. lyttæ parti thoracis dol.

18th.—Is better; cough relieved; feels low.

21st.—No expectoration; no cough scarcely.

On examination with the stethoscope, the respiratory murmur was healthy. On percussion, the right side sounded the best. Says he can lie on his right side the best. Action of the heart very much increased and diffused.

Case xi.—Bronchitis; Incipient Phthisis.

Sept. 18th, 1830.—Thomas Simmonds, æt. 33; complains of tenderness in the epigastric and right hypochondriac regions;

dyspnœa, cough, and expectoration, profuse at times; disagreeable taste in his mouth; little hoarseness; appetite pretty good; bowels confined; tongue furred slightly; pulse 80, hard; urine scanty and high coloured. Has great pain sometimes in micturition. Complexion pale and sallow; dejected countenance; health not very strong in general. His trade is that of grinding the bark for tanning. Ill two weeks. About a fortnight ago caught a violent cold from getting wet.

19th.—Sumt. linct. anod. ʒi. urg. tussi.

20th.—V. S. ad ℥xij. ℞ træ. digit. ♏x. Potass. nitr. gr. x. Dec. hord. ℥i. M. sumt. 4tis. horis. Sumt. pil. ant. co. i. o. n.

21st.—Applic. hirud. vi. epig.; postea emp. lytt ibid.

22nd.—Complains of pain in bowels; great lowness of spirits; tongue foul; bowels open. Omitt. pil.

27th.—Is in no pain; tongue cleaner; bowels open; urine clear, not so high coloured, and more copious. Feels worse in a morning.

29th.—Infric. pectori ung. antin. tart. o. n. Perst.

Oct. 2nd.—Cough better; expectoration profuse in the morning; pulse quiet. Inhal. vapor chlorin. semel quotidiè. Omit. medic. ℞ chlorat. potass. gr. vi. aq. distill. ℥i. M. sumt. ter diè perst. in usu ung.

4th.—Inhaled the chlorine vapour this morning; it produced a good deal of coughing some time after.

5th.—Has not coughed so much since.

6th.—Thinks himself improved; complains of pain across the epigastrium. Tongue clean; bowels open; pulse 80; breath better. Great lowness of spirits. Sumt. mist. ammon. carb. ʒi. urg. languore.

7th.—Says that he could get no sleep last night on account of the bad effects produced by the chlorine vapour. It caused cephalalgia, considerable shortness of breathing, fulness in the stomach.

8th.—Breath very much embarrassed. Cephalalgia still continues. Applic. hirud. ij. sing. temp.

9th.—Upon examination with the stethoscope, the respiratory murmur was condensed, and frequently interrupted by the mucous rattle. Also a sharp metallic sound towards the summit of the chest. Percussion gives an imperfect sound on both sides of the thorax. He was bled freely, and went out of the infirmary, and has continued since an out-patient, taking the chlorate of potassa, and gradually getting worse.

Observations.—It is worthy of remark, that in each of the cases above related, in which the chlorine was inhaled, some relief appeared to follow the administration of the remedy. To those who are accustomed to the treatment of consumptive patients, and who are consequently well aware that hope springs eternal in the hectic breast, there is nothing very striking in this circumstance, for patients of this kind almost always feel better after the trial of a new remedy.

Another point, also, is deserving of much attention. In all the cases, the secretion from the bronchial membrane, was modified by the inhalation of the chlorine vapour. The patients all seemed to speak of a greater freedom of expectoration after the inhalation; from which it appears certain, as might have been expected, that the action of the chlorine on the mucous membrane of the respiratory organs, is worthy of great regard. But I have not been fortunate enough to meet with any case, (and I am sure any one who peruses the foregoing, will not think they are of this description,) which leads me to believe that the vapour of chlorine has any curative influence upon those ulcerations that take place in the excavations, arising from the dissolution of tubercles, in the cellular structure of the lungs.

On the whole, too, the result of my trials with this remedy has led me to this conclusion, that unless used very cautiously, and with a due regard to the peculiar irritability of the mucous membrane of the air-passages, it may frequently be productive of very serious inflammatory action. The case of Simmonds appears to justify, in an especial manner, this remark. The chlorine did not with him, at the time of inhaling, produce any very violent paroxysm of coughing, but, on the sixth day of its use, he was seized with pain and giddiness of the head, together with much embarrassment of breathing; so that no persuasion could have induced him to have tried the remedy again, and the inflammatory symptoms did not give way until he had been largely bled. Of the other two infirmary patients, Milman and Williams, the latter only has derived any permanent advantage, he having gone home tolerably well: but Milman is now in the infirmary, and the signs of increased disease of the lungs have gradually stolen on, and there is every prospect of his falling a victim to tuberculous disease of that organ.

Altogether, then, the trials I have so far made with chlorine vapour, have not been very encouraging. They have impressed me with the belief that it is a remedy requiring much caution in its use, as it may readily excite inflammation. It appears, however, to have much power in controling the action of the bronchial membrane, and in this point of view, would seem to deserve a full trial from the profession at large. In all old bronchial cases, where there is little irritability of the lungs, it holds out a promise of being salutary. In some modifications of that very wayward disease, asthma, there is a probability of its being occasionally useful; indeed, my friend, Dr. Baron, of Gloucester, has told me of one very obstinate case of this nature, in which it appears to have done much good: but, as a cure for tuberculous consumption, it will share the fate of all remedies for that disease which have preceded it, and have been warmly eulogized by those well wishers to the cause of humanity, who have been at much pains to impress upon the world their curative powers.

Indeed, there are pathological considerations respecting this very untractable disease, tuberculous phthisis, which exclude

from us the hope that any local application to the mucous membrane of the lungs, can be of much avail; for the tuberculous deposits, in many instances of this disease, are by no means confined to the respiratory apparatus. Whoever has perused with attention, pathological writers on consumption, must have come to the conclusion, that the mischief, in these cases, is not confined to the lungs, and often, even, does not originate there. The later French writers have more especially made this point clear. The writings of Laennec and Louis are full of interesting particulars, which shew that this is the case; indeed, it would appear, from the investigations of the last-named indefatigable pathologist, that there is scarcely a part of the human body in which the peculiar diseased deposit that characterizes tuberculous consumption, is not occasionally found; which appears to me, as I before observed, to preclude the expectation, that any local application to the mucous membrane of the lungs will be found, which can be so effectual as to produce an absorption of these deposits in the different organs of the body.

By way of impressing this consideration upon the mind of the reader, I am induced to relate a case where very extensive ravages were made by tuberculous disease, in the abdominal and thoracic cavities of a young lady, who fell a victim to consumption. The progress of the disease was not marked by any peculiar circumstance. The different stages of tuberculous consumption were passed through without any remarkable deviation from their usual course, and the patient sunk at last from distressing diarrhœa.

Examination of the body of Miss D. 50 hours after death.—Emaciation had proceeded to the last degree; scarcely any fat on the omentum.

Thorax.—Some effusion in the cavity of the chest. Adhesion between the costal pleura and that covering the superior lobe of the left lung. In taking the lungs out of the thorax, a large cavity, half filled with tuberculous matter, softened, gave way, and the softened matter escaped into the cavity of the chest. On examining that lung, we found the superior, middle, and inferior lobes, occupied by tubercles, around which, the substance of the lungs was very dense, and of a fleshy colour. There were several cavities in this lung, many of which were nearly empty.

In the superior lobe of the right lung, we found a vast number of white tubercles, occupying almost the whole of the structure of the lungs; and there were four rather large cavities, half filled with softened tuberculous matter; and around these cavities the substance of the lungs was much hardened. In the middle and inferior lobes, there were not more than two or three white tubercles, about the size of a nut. The structure of the lungs in these lobes was hardened, and of a darker colour than natural. There was evidently much effusion in the air-cells. There were numerous superficial ulcers in the trachea and bronchia, and

the mucous membrane of these parts was in a highly injected state. There was a considerable purulent effusion in the trachea, bronchia, and air-cells.

The liver was very pale, and nearly twice its natural size. There was no bile in the gall bladder.

Mesenteric glands all enlarged, some as large as a nutmeg; none in a state of suppuration. Small intestines much diseased; coats thickened and in a very vascular state; tuberculous matter deposited in small points under the peritoneal coat; villous coat in a state of ulceration, in some parts destroyed in almost the whole circumference of the gut.

Spleen, pancreas, and kidneys, healthy.

Observations.—It will only be necessary here to call the reader's attention to the extensive destruction produced in this case, by tubercles, in all the organs subservient to nutrition, and to ask whether the imagination can picture to itself the possibility of this destructive process being arrested, by the application of any agent with which we are acquainted, to the mucous membrane of the lungs? or to cavities in the lungs through the medium of the bronchial tubes?

Since the above cases and remarks were composed, the work of Sir Charles Scudamore, on consumption, has fallen into my hands. In this work, I see none of the facts brought forward in support of the process of inhalation, which at all militate against the position taken up in the foregoing paper, that we have hitherto not discovered any remedy for tuberculous consumption. Out of the sixteen cases related by Sir Charles Scudamore, four were fatal, from tuberculous degeneration of the lungs. Of the successful cases, it appears to me that the bronchial membrane, in most of them, may be supposed to have been the principal seat of the disease; and there is nothing extraordinary in such cases recovering under the use of the remedies that have been long had recourse to in this species of disease.*

But I cannot help expressing my astonishment, that a knight and a physician of eminence, who supposes he has made important discoveries in the mode of treating a very intractable class of diseases, should not have been *very* particular in giving a full and precise description of the manner of applying the reme-

* I have, myself, used the iodine inhalation in two cases, where the manifestation of tuberculous degeneration was pretty evident; but I am grieved to say, that my patients were not benefitted by its use; indeed, one of them was certainly made worse by it, as the cough and difficulty of breathing were exasperated after each employment of it. The following was the formula employed:

℞ Iodinæ, ℈ij. Potassæ hydriodat. ℈i. Alcoholis. Aquæ distillatæ, āā f. ℥ss.

Of this tincture, two drachms were added to a pint of water, at the temperature of 120°, and the patient inhaled the fumes for ten minutes, twice a day. Read's inhaler I found a very useful apparatus for the purpose.

dies: concealment, in such circumstances, is not calculated to produce a favourable impression of the author, who thus cannot fail to call upon himself the criticisms of his professional brethren. Nor will the reason that is given for withholding this necessary information, be considered a sufficient apology for such an omission, viz.; "from an apprehension that patients themselves might be tempted to undertake the treatment of their own cases, with the great risk of receiving injury instead of benefit, I have avoided the introduction of formulæ of the remedies for inhaling."

By this omission, Sir Charles Scudamore has run a risk, not very favourable to his medical reputation; for in consequence of it, some persons may be induced to regard his work, rather as a species of direction for the reader to his residence, in Wimpole-street, than as a praiseworthy offering upon the sacred altar of medical science.

ARTICLE IX.

CHELTENHAM CASUALTY HOSPITAL.

A Case of Inflammation of the Lungs, with Observations on the formation of Tubercles.

BY CHARLES W. TURNER,

Member of the Royal College of Surgeons, in London, &c.

February 12th.—This patient was admitted for inflammation of the knee-joint, but this being removed, an attack of inflammation of the lungs came on, and was exceedingly severe. The following is the state of the patient on the 22nd. The pulse full and hard; tongue coated with a white fur; a dull heavy pain in the chest, much increased by respiring fully; the breathing laborious; a dry, troublesome cough; a remarkably distressed expression of the countenance; considerable moisture on the skin; bowels confined: suffers a good deal from piles; urine high-coloured, and deficient in quantity. Fiat V. S. ad ℥xvi. mist. aper. cum liq. antim. tart. Habeat linctus pro tussi.

27th.—The symptoms are much the same, if any thing, rather worse; the cough is very troublesome, and the pain of her chest prevents her taking a full inspiration. Repet. V. S. Contin. mist. aper. etc.

29th.—The character of the pulse completely altered; it is now small and quick, rather indicative of irritation than inflammation; considerable cough; puriform expectoration, streaked with blood; the respiration is short, and she is unable to take in a full breath; complains of a heavy weight upon her chest; passes sleepless nights, flushing of the cheeks, and perspires a good deal; has lost considerably in flesh. Take the aperient mixture occasionally, as the bowels are very sluggish. Ordered an expectorant mixture, with a small quantity of digitalis.

March 2nd.—The patient is much in the same state as last described; cough unabated; spits up at least half a pint of mucus and pus daily, now principally consisting of yellowish matter, in which some white specks are to be seen, varying from a pin's head

to the size of a pea. Suffers very much from hectic flushes and night sweats; pulse quick, 126; tongue white and tremulous; is exceedingly emaciated and debilitated, and is able to sit up only a short time in the day. Ordered, ℞ Træ. digitalis, ʒi. Vin. colchici (sem.) ʒss. Liq. opii sedativ. ʒij. M. Sumat gtt. xxxvi. ter quotidie. Infric. ung. antimon. tart. thoraci. Diet to consist of beef tea, mutton broth, arrow root, etc.

4th.—Expectoration increased since the last report; cough much the same; slept a little better, but frequently disturbed by the cough; perspires as much as before; breathing short; pulse rather diminished in quickness; bowels confined. Her appetite hitherto has continued very good; suffers a good deal from thirst. The tartar emetic ointment is beginning to produce an eruption upon the chest. Contin. guttæ et unguent. Ordered, ℞ Magnesiæ sulphat. ʒi. Acid. sulph. dil. ʒss. Træ. digitalis, ʒi. Infusi. rosæ, ʒviij. M. et sumat ʒiss. p. r. n.

7th.—No new symptoms; expectorates more than half a pint daily, principally pus. A plentiful crop of pustules produced by the ointment, and which has afforded decided relief to the breathing and cough; sleeps a little better; she is remarkably thin, and so weak as to be in bed nearly the whole day; hectic fever continues; night sweats diminished; it is this symptom which awakes her about 2 o'clock, A. M.; every morning she finds herself bathed in perspiration; the pulse has a more even beat, though still very quick; appetite not quite as good. Ordered to take veal broth and beef tea, as frequently as agreeable. Contin. guttæ et ungt.

8th, 9th, and 10th.—Much the same in every respect; continues to expectorate quite as much: sleeps rather better. Pergat.

12th.—The night sweats increased, and has not slept so well these last two nights; a very extensive eruption produced by the ointment, which is exceedingly painful, but attended with evident advantage to the other symptoms. Appetite not very good. ℞ Træ. digitalis, ʒss. Vin. sem. colchici, ʒij. Acid. sulph. dil. ʒss. Liq. opii sedativ. ʒij. M. capiat gtt. lx. ex cyatho vinoso dec. sarsæ co. ter quotidie. Omitt. rosæ, &c. ℞ Pulv. ipecac. gr. vi. Extr. hyoscyam. Ext. coloc. co. ā. ʒss. M. et divide in pil. xvi. Sumat i. vel ij. hora somni p. r. n.

13th, 14th, 15th and 16th.—Expectoration certainly diminished; pulse about 90; sleeps better; night sweats less; hectic fever inconsiderable; appetite improved; bowels kept moderately open by the pill at night. Suffers much from the eruption on the chest, which discharges a great deal. Applic. cataplasm. thoraci. Cont. guttæ et pil.

17th, 18th, 19th and 20th.—Symptoms generally improved; spits less; breathing more free; pulse 90, rather quick; night sweats much less; appetite improved; has certainly not lost flesh these last few days, but, if any thing, rather gained. She sits up a little in the middle of the day. Takes a good deal of light nourishment. Pergat.

21st, 22nd, 23rd and 24th.—For these last few days she has slowly improved, and has been able to sit up longer each day. Sputa scarcely amounts to an ounce, a good deal of that mucus, occasionally there is a little whitish mass floating in it. She has certainly gained both flesh and strength. Contin.

25th, 26th and 27th.—Nothing can be more favourable than the report for the last three days; spits very little; pulse 80, even beat;

sleeps well; perspires still a little; appetite very good. Has sat up the greater part of these last two days. Pergat.

28th, 29th and 30th.—Much improved; feels a great deal stronger, and able to walk up and down the garden once or twice a day. Cough nearly gone; spits up a little puriform fluid occasionally. Pergat.

June 10th.—So much improved since the last report, that she was able, with the assistance of a neighbour, to walk to the casualty hospital.

Complains of slight difficulty of breathing to-day, which probably arose from this exertion; however, she was recommended to rub in the ointment again, and continue the drops.

July 8th.—All the pulmonary symptoms have disappeared, and she looks very well, having gained flesh considerably. She was to-day dismissed cured.

The case above related, forms, I think, an excellent illustration of the following passage, from the work of Dr. Baron, on tubercular disease. "In constitutions predisposed to cachectic diseases, inflammation may be the means of calling tubercles into existence, either in the lungs or elsewhere. But, although I admit this as a possible occurrence, I am very much inclined to believe it not a common one; for the very existence of a predisposition to such disorders, proves something wrong in our system, and may warrant the inference, that inflammation merely puts the latent disease into a fatal state of activity." A gentleman, who was remarkable for his accuracy in distinguishing disease, saw the case, and agreed with me, that tubercles must have existed in the lungs of Martha Rowland, prior to the occurrence of inflammation of that viscus, and, indeed, suppuration occurring in so short a time, would likewise tend to strengthen this belief. I am aware that it is stated by Dr. Stokes, in a Clinical Report,* that it is possible for tubercles to form and suppurate in five days; but this occurred after an attack of fever. Now, how far fever may have assisted in a constitution predisposed to tubercular disease, cannot be determined; certain it is, that after fever, the system is in such a state, as would seem to assist most materially the developement of any disease the patient may be most liable to. A remarkable instance of this kind I was witness to a short time since. A gentleman was attacked with fever; he was much predisposed to glandular enlargement, and of a scrophulous habit; suddenly, I may almost say, the symptoms of fever gave way to those of acute rheumatism; and what is a very unusual termination of rheumatism, a large quantity of pus formed in the knee-joint, and amongst the muscles of the right upper extremity.

Whatever may be the primary state of tubercles, whether they are "small vesicular bodies with fluid contents, and gradually pass through a process of inspissation, till they become hard," as asserted by Doctor Baron; or whether, at the first, the appearance is of a grey semi-transparent substance, which gradually becomes yellow opaque, and very dense, as asserted by Laennec, is not the intention of this paper to enquire; the discrepancy of opinion which exists on this point is so great, that no two authors coincide; and it is fortunate it is of secondary consideration, for, from the few opportunities we have of seeing tubercles in their early stage, it cannot easily be decided.

* Dublin Transactions, vol. v.

M. Andral appears to agree so far with Dr. Baron, "that inflammation would seem to play a more important part in the production of tubercles, than has been assigned to it by the school of Bayle; but, on the other hand, this inflammation will not satisfactorily account for the formation of the said bodies, notwithstanding the doctrine of M. Broussais and his disciples." I think a multiplicity of arguments and facts conld be brought forward, shewing that, however much inflammation may rouse the latent tubercles into action, yet that tubercles are not the product of inflammation. The case of Rowland is strongly corroborative of this opinion. She was a scrophulous diathesis, very liable to take cold, and some of the glands of the neck occasionally became enlarged; still she had no symptom that gave the least suspicion of tubercles existing, and had there been any cough, however slight, it might have led us to watch the symptoms, from the circumstance of scrophula and tubercles being so intimately connected; but such was not the case.

Another case, which I remember particularly well, (and which I will briefly relate,) which would tend to support the idea that tubercles do sometimes exist in the lungs in a latent state. This man died from tubercular phthisis. On examination, the lungs were found most extensively diseased, (but more particularly the right,) tubercles were to be seen in various stages of suppuration; but at the back and upper part of the right lung, there existed a number of hardened tubercles, which had no appearance of softening; and from this hardened condition, together with being so closely connected with each other, it would lead one to suppose that they had existed for a *considerable* length of time. This man was of a scrophulous habit. He was admitted into the casualty hospital, under the care of the late Mr. Averill. He had sinuses near the ankle joint; a great discharge took place from these sinuses, which added to the irritation caused by disease of the metatarsal bones, the patient became very weak. Amputation was performed, and, as soon as the stump had nearly healed, pulmonary disease made its appearance; and the man, who never had any cough, pain in the chest, or other symptom indicating the existence of tubercles, at once exhibited puriform expectoration, much of the same description as Rowland.

From what has been stated, it seems fair to conclude that tubercles did exist in both these cases, although not suspected. As soon as the irritation and discharge of the diseased foot was removed, so soon was diseased action set up in the lungs; and it would appear that the disease of the lungs was kept under by the copious discharge which took place from the sinuses leading to the diseased bone.

ARTICLE X.

Quarterly Report of the Birmingham Eye Infirmary.

BY MR. MIDDLEMORE,

Assistant Surgeon to the Eye Infirmary.

Ophthalmia, simple acute, 62; ditto, chronic, 30; ditto, acute, with pustules of the conjunctiva, 50; ditto, with ulcer or pustule of the cornea, 26; ditto, with purulent secretion, 14; ditto, purulent, 5; ditto, strumous, 27; ditto, gonorrhæal, 2; ditto,

rheumatic, 2; ditto, irritable, 16. Granular and cuticular state of conjunctiva, 4. Pterygium, 2. Vascularity of the cornea, 6. Opacity of the cornea, 22. Staphyloma of the cornea, 2. Iritis, simple acute, 17; ditto, chronic, 5; ditto, stumous, 2. (a) Cataract, 3. Ossification of the crystalline lens, 1. Glaucoma, 2. Amaurosis of various kinds and degrees, 25. Fungus, 1. Ptosis, 2. Strabismus, 1. Inflammation of the palpebræ, 6. Œdema of the palpebræ, 3. Tinea, 28. Lippitudo, 2. Hordeolum, 3. Entropion, 4. Tumours in the eye-lids, 7. Carcinomatous and other malignant ulcerations of the eye-lids, 2. Inflammation of the lachrymal sac and duct, 6. Fistula lachrymalis, 1. Wounds of the eye-ball and its appendages, 7.

(a) Of these cases I shall only notice, particularly, the following:—Thomas Boothby, æt. 78, has capsulo-lenticular cataract of the right eye; left eye-ball collapsed from former disease; appearance of the right eye-pupil large and slightly irregular; the opake condition of the capsule indicated by its silvery-streaked appearance, and through its most transparent parts, the opake lens may be distinguished of an amber colour.

In consequence of the extreme age and feebleness of this old man, I was reluctant to make a larger incision of the cornea than was absolutely necessary for the removal of the cataract; but, judging from its appearance, the age of the patient, and more especially from the circumstance of his capacity to see almost equally well, whether the pupil were contracted or otherwise, that the lens was greatly indurated through its entire circumference, I did not deem it prudent to risk the laceration of the iris, and the production of deep-seated inflammation, by making an incision of less extent than the half of the cornea. I judged it right, also, to make the upper section, from observing a disposition to entropion, a disease which, if any tendency to its formation be evident, prior to the operation of extraction, is generally much increased, afterwards, by the spasmodic contraction of the lids, and the application of the bandages ordinarily employed, to exclude the light and steady the eye. This patient was discharged from the Infirmary, three weeks after the operation, with excellent vision; a circumstance which probably would not have occurred, if the incision of the cornea had been made at its lower part.

In very old emaciated persons, where any disposition to entropion is discovered, I should advise the performance of the customary operation for its removal, prior to the extraction of the lens; or, in case that be objected to by the patient, the upper section should most certainly be made, and all pressure upon the eye-ball should be discontinued as soon as it appears probable that union of the corneal flap has taken place; the incision of the cornea should also be as small as may be compatible with the removal of the lens, without injuring the iris, or bruising the divided edges of the cornea, on account of the great risk of sloughing from the feebleness of the reparative powers of persons advanced in life. In young people the cornea may be divided to a very considerable extent, without any apprehension of sloughing; and in that case it would be highly improper to risk the occurrence of the ill consequences connected with an attempt to urge the lens through an opening too small to allow of its easy passage; the same care, therefore, to adopt, with equal precision, the size of the opening to the magnitude of the body it is intended to transmit, would be

not only unnecessary but might prove highly injurious. If only a slight degree of entropion exist, and an operation for its cure be deemed superfluous, the extraction of the eye-lashes might, at first view of the subject, appear to be sufficient to secure the patient against any injury from this defect; but, as the union of the corneal flap takes place at a variable period, it may be requisite to continue the bandages to the eye, and, consequently, a main cause of the entropion, until the ciliæ are reproduced; and it will be found, by experience, that the irritation they occasion, when partially grown, will be even greater than would have occurred if they had not been previously extracted, owing, in a great measure, to their more direct inclination towards the globe.

Absorption of the Iris.

A boy received a blow upon the eye, from a piece of metal, which was followed by considerable pain and inflammation, and laceration of the iris; for a time, the pupil was cordiform, being pointed at its lower part; slowly, and without any pain, the whole of the iris was absorbed, and the eye became amaurotic. I have several times noticed a similar occurrence, namely, laceration of the iris, from local injury, followed by its partial, and in one instance, its total absorption; and in every case the organ so injured has, eventually, become amaurotic.

Growth from the Ciliary Ligament.

A child, ten years old, was struck upon the eye, with the closed hand, by one of his companions, but without occasioning a sufficient degree of inflammation to excite the attention of his friends; in about a week, a small reddish tumour formed in the anterior chamber, at the anterior side of the eye, which appeared only to be attached to the ciliary ligament; it soon became as large as the half of a small pea; was convex anteriorly, and extended nearly across the pupil; it occasioned no pain, and was not accompanied by any perceptible inflammation; the motions of the iris were not impeded, nor was its colour changed; the pupil, also, preserved its circular form. I placed this boy's constitution under the influence of mercury, and was pleased to find that the tumour gradually became absorbed, and did not again return.

I have said this tumour arose from the ciliary ligament, because its attachment was in the situation of that part, and, also, because the action and colour of the iris were unaltered. In the few instances in which I have seen similar growths from the iris, the colour of that membrane has been changed, its action interfered with, and the circularity of the pupil has also been destroyed.

Congenital malformation of the cornea and sclerotica.

A servant of a chemist of this town, 22 years old, has a small excrescence on the left eye, arising from the cornea and sclerotica at its temporal side; it has a white, smooth, and convex surface, and in its centre there is a small depression, from which several strong black hairs arise, which incline downwards, so as to hang over the lower lid; it is firm to the touch, and densely opake, and appears to be covered by the schlerotic conjunctiva; the surrounding cornea and sclerotica preserve their natural structure; he says that the blemish was born with him, and that the hairs began to plague him only a few years ago. This man usually calls upon

me for the purpose of having the hairs removed, about every six weeks; and it is my intention to apply the nitrate of silver to the cavities containing the bulbs of the largest hairs, when I next extract them, and if this do not succeed, to dissect them out, if it can be accomplished without any danger of penetrating the globe.

In this case, the tumour had an equal origin from the cornea and sclerotica; it was extremely firm to the touch; it had increased with the growth of other parts; the hairs did not appear to produce inconvenience until the period of puberty, and they were of the same colour, and had the same inclination, as those of the lower eye-lid. As this is the only instance I have met with of a congenital malformation of this description, it is impossible for me to say how far the circumstances just enumerated are uniform in their occurrence.

Peculiar appearance of the anterior capsule.

Thomas Corbett, æt. 33, has discovered, for some time past, considerable dimness of vision, which he thinks has latterly somewhat increased; has great pain in the head; a furred tongue, and strong pulse. Stooping, active exertion, or any thing much exciting the system, increases the defect of vision. There is no external inflammation of the eyes, but upon the anterior capsule of the right eye, is the figure of a cross, (thus †) surrounded at various distances by specks of opake matter, some of which, from their depth, appear to be situated in the vitreous humour; on the capsule of the left eye, the letter y (thus ʏ) is accurately delineated, with an appearance similar to that in the right around it.

I have frequently remarked very strange kinds of opacity of the anterior capsule, but in no former instance have I noticed appearances so peculiar in form, and definite in figure, as those now described.

ARTICLE XI.

Statistical Returns of PROVINCIAL HOSPITALS.

WE stated, at the commencement of our labours, that, in conducting the *Midland Reporter*, it would be our constant endeavour to bring before our readers all the useful information in our power, relative to the condition of provincial infirmaries. That, so far as the work has hitherto extended, this promise has been fulfilled, most persons will be inclined to grant. The papers of our friend Dr. Walker, contain a mass of information, upon this subject, which is not to be found in any other English writer. We are glad to find that the efforts to improve the condition of provincial infirmaries, and to make them more subservient than they have been, to the cause of medical science, is not confined to the profession. The Rev. Mr. Oxenden, of Bishopsbourn, near Canterbury, is employing himself in collecting materials connected with this subject, and proposes to publish, annually, a statistical report of the state of the provincial hospitals of England. He has, very generously, himself, undertaken to send a report, for one year, free of expense, to all the provincial hospitals in England; but, of course, in future, this pecuniary sacrifice is not to be expected from him; and we sincerely hope that the physicians and surgeons

attached to the different provincial hospitals, will see and feel the importance of supporting, by their sanction, an undertaking which is likely to be productive of considerable benefit to the medical profession. In justice to Mr. Oxenden, we cannot withhold from our readers the following letter, addressed by him to the medical officers of the English provincial infirmaries:—

"Bishopsbourn Rectory, Nov. 10, 1830.

"Sir,—Having experienced the most obliging attention from the medical officers connected with several of the principal hospitals, which I have lately had an opportunity of visiting, and feeling persuaded that considerable disadvantage attached to them *generally*, from the want of a *comprehensive systematic detail* of their respective admissions, discharges, expenditure, &c. &c. by which such comparisons might be individually made, as would lead to a reasonable conclusion with reference to the internal economy of each; I determined, though unconnected with the profession, to endeavour, partially, to supply this desideratum; the result of which attempt I beg now to offer for your acceptance, in the hope that you will not merely derive some little information from the table now completed, but that you will so far approve the plan and purpose of the undertaking, as to be induced to render your assistance in the continuation, *annually*, of the same work, improved by such alterations and enlargements as experience and observation may, from time to time, suggest.

"In furtherance of this object, I propose (if answers favourable to the work be received by me) to forward to each Hospital a printed schedule, to be accurately filled up by the Secretary, *at his leisure*, in such manner as will then be explained. From these documents, and from the annual reports, I shall be enabled to publish a correct return of the state of each institution, such as cannot fail of being *generally* interesting, if not useful, to the faculty.

"It will not, however, be in my power to offer (as upon the present occasion) this *annual* work to the public *gratuitously*, whatever pleasure I may feel in *thus* presenting the accompanying table, in order to ascertain the feeling and opinion of medical gentlemen with reference to its utility or efficacy, as a mean of comparison. As far as my own time and trouble are concerned, together with such expences as must necessarily arise from the postage of letters, parcels, and various other incidents, I freely and willingly offer them for the promotion of what I conceive to be a public benefit; but the publisher's charge I should divide by the number of copies subscribed for; a list of those gentlemen who may favour me with their names being subjoined to the work. And to avoid misleading you on this subject, I cannot, perhaps, notice a better criterion of the probable expence of publishing such a table, than by stating that Messrs. Underwood's charge for the accompanying statistical report, containing the returns of *twenty-seven* hospitals, is £43 19s. 3d.; that, however, now projected would probably comprehend *fifty*, including all the London hospitals, the publisher's charge for which, may be calculated, in round figures, at £100. I should, however, propose sending to each subscriber, with the work, a copy of such charge, as an index to the price; and to obviate any imaginary difficulty in the payment of each subscription, I may here observe that I shall be able to suggest an easy and convenient mode of effecting the remittances to the publisher.

"From the table before me, it appears that 165 medical officers are attached to the 27 hospitals there reported; and it is probable, therefore, that there are at least 270 connected with the total amount of hospitals: and assuming that all (if any) would be disposed to take a copy, together with one for each Hospital, there would be a demand for 320 copies, at about *six shillings* per copy, a sum scarcely exceeding the carriage of some of the parcels which I have received from the more distant hospitals. But any amount of copies required beyond this number might be struck off for about 1s. 6d. each; thus varying the price inversely as the subscribers.

"My chief reason for preferring a tabular view of the various hospitals collectively, to any distinct report of them in the shape of a volume (which would be less fatiguing to the compiler,) is the conviction that, for *practical purposes*—for comparative inquiry—there can be no medium of communication *so convenient or so instructive.* An historical pamphlet, by Dr. Walker, of Huddersfield, or other medical gentleman of ability and research, would, doubtless, be a valuable adjunct to this little work; but I conceive that the publication of these tables for a few years, would prove of incalculable assistance to the future historian on this branch of statistics—a branch which I consider to be worthy of far more attention than has hitherto been bestowed upon it.*

"The present table, although more complete, perhaps, than any previous analysis of the kind, I do not offer to the public as *exempt* from inaccuracies—a few there are of *real,* more of *apparent,* incorrectness. The *real* errors are such as have naturally arisen out of the impossibility of forming *perfectly* accurate details from some of the printed reports, however much I may have been assisted by private communications, for which I now beg to return my best thanks. The *apparent* errors are such as result from the necessity of observing my own classification of items, in order to preserve uniformity of system; and although the total expenditure of each department may, in consequence, occasionally differ from the hospital arrangement, the grand total expenditure (after deducing the purchase of stock, &c. &c.) will be found identical.

"In the arrangement of this table, I have considered each translation from I. P. to O. P. and vice versa, as a *first admission;* which, though not the practice with all the hospitals, should obviously be adopted.

"The proportions of medical and surgical cases are, in two or three instances, stated by guess by the house surgeon; for in some few of the hospitals, the admission books are so scanty of detail, as to render it almost impossible to separate the cases. The mixed, I have, for convenience, classed with the surgical patient.

"In some of the bospitals, patients who receive trusses *only,* are entered in the general admission book, and discharged the same

* "When I first had it in contemplation to communicate to the public a few observations upon Canterbury, Derby, Nottingham, Leicester, Manchester, Birmingham, and other hospitals, I was not aware of the existence of any recent publication on the subject; but while visiting the Worcester Infirmary, I was kindly presented, by Dr. Hastings, with a copy of the third number of the *Midland Reporter,* containing Dr. Walker's "Observations upon English Hospitals," which (with the concluding paper in the 8th number) I have had much pleasure in reading; and I beg to express a hope that his labours, in this branch of his profession, will not rest here."

day as 'relieved' or 'cured;' but it appears to me that, though a patient so circumstanced is unquestionably *relieved*, yet the discharge of him *as such* will lessen the average time of treatment materially, and thereby lead to erroneous calculations. I have, therefore, given a separate line for patients *so* relieved; and venture to recommend the adoption of this distinction in the annual provincial reports.

"With regard to the average time of treatment, a variation will be observed in some from the statements sent to me: for, since but few of the hospitals make any return of this somewhat interesting particular, I have been obliged to adopt one general and uniform mode of calculation upon certain data; which, though accurate when 'the patients on the books' at the *beginning* of the year, are equal to those 'remaining on the books' at the *end* of the year, will be found to vary a little in proportion as the one exceeds the other."

ARTICLE XII.

Report of the Worcester Infirmary.

The number of patients treated in the Worcester General Infirmary, from the 1st of January, 1830, to the 1st of July, (exclusive of those previously on the books,) amounted to 599; of these, 288 were medical; 311 surgical cases.—Males, 342; females, 257.—In-patients, 273; out-patients, 326.

General Results.—Cured, 261; relieved, 46; discharged at their own request, 3; for irregularity, 60; dead, 10; remaining on the books, 219.

Diseases.—Abscess, common, 8; psoas, 1; asthma, 1; amenorrhœa, 14; aneurism, 1; anomalous, 38; anasarca, 1; bronchocele, 10; burn, 4; cephalalgia, 14; contusion, 22; cutaneous eruptions, 14; calculus vesicæ, 1; cancer of the lip, 1; cynanche tonsillaris, 3; diarrhœa, 2; diabetes, 1; dislocation, simple, 3; dropsy of tunica vaginalis, 1; dyspepsia, 30; exostosis, 2; eye, diseases of, 26; epilepsia, 4; fever, continued, 2; fistula, 1; fracture, simple, 13; of extremities, 5; compound of extremities, 1; gonorrhœa, 3; hæmorrhage from lungs, 1; from uterus, 3; hare lip, 1; heart, organic disease of, 5; hæmorrhoids, 3; hæmatemesis, 2; hernia, 23; hemiplegia, 11; inflammation of the bronchi, 19; liver, 26; lungs, 29; joints, diseased, 38; leucorrhœa, 3; lumbago, 2; phthisis pulmonalis, 3; neuralgia, 1; nephritis, 1; pneumonia, 9; phymosis, 1; polypus nasi, 1; prolapsus uteri, 2; rheumatism, acute, 24; chronic, 2; schirrous, 3; scrofula, 8; spine, diseases of, 9; stricture of urethra, 5; syphilis, 6; testes, diseased, 9; tracheitis, 4; tumours, 10; ulcers, 67; wounds, 21.

Case I.

James Minett, æt. 33, was admitted into the Worcester infirmary, Oct. 2nd, 1830.—Syphilitic blotches about the face; sores under the prepuce; ulcer on the right leg; great debility and emaciation; tongue pretty clean; bowels open. A chancre appeared about six months ago, under the prepuce, followed by a bubo in the left groin. Two more chancres appeared in about a month after the first. On the onset of the disease, he applied for advice; was under the treatment of three or four different individuals. His

mouth was slightly affected on his admission. The last person who treated his case, bled him twice a week for six weeks successively. He was in a very reduced state on his admission. ℞ Sulph. quinin, gr. ij. Acid sulph. dilut. gtts. v. Mist. ros. acid. ℥iss. M. sumt. ter indiès. Hab. diætam optimam.

12th.—Sores are rather increased in size. He is stronger in himself. ℞ Pil. hydr. gr. i. Ext. cicut. gr. iij. M. sumt. ter diè. Omitt. haust.

14th.—There was phymosis; the integuments covering the glans penis were laid open, and the glans exposed; it was nearly eaten away by ulcers. Applic. lot. nigr. ulceribus. Cont. pil. Sores on the body and the penis were very much improved by the treatment adopted, and continued to be so.

19th.—Is slightly purged. Adde sing. dos. pil. opii gr. ss. Purging discontinued. Recurred some days after. Mouth is sore.

28th.—Omit. pil. hydr. Sum. pulv. cretæ co. ℈i. urg. diarrhœa. The ulcers continued improving, and he is now convalescent, Jan. 12th, 1831.

Case II.

Sept. 6th, 1830.—Wm. Hooper, æt. 62, was brought into the Worcester infirmary, about 8, p. m., with compound fracture of the right leg. The accident happened some distance in the country, ten hours previously, and he had lost a great deal of blood. The tibia and fibula were found to be fractured near the ankle joint. The tibia was protruding through the integuments. Doubt also existed at first, as to whether the joint itself was implicated in the mischief. Not being able to reduce the protruding portion of the tibia, it was sawed off. Upon minute examination, there was evident crepitus felt in the joint, and, after mature deliberation, it was considered expedient to amputate the limb, which was done, about four inches below the knee. Three ligatures were applied. Considerable depression came on after the operation. Previous to the operation, the countenance was flushed: great heat of skin; pulse 72, hard and full; health lately impaired. The mischief was caused by his falling from a load of straw, upon his *feet*, and the leg giving way under him.

7th.—Passed a good night; no pain in stump; tongue white and dry; pulse 81; feverish, and rather thirsty.

9th.—Not so good a night; pulse 85; bowels confined. Sum. ol. ricin. ℥i. statim.

12th.—On taking off the dressings, the stump was in a sloughing state. Very restless; pulse 100 and weak; stump quite open; considerably worse; very feverish; edges of the stump in a state of sphacelus. Applic. catap. commun. Cap. ol. ricin. ℥ss. et post evacuationem, træ. opii gtts. xl.

The next day was ordered brandy and opium. This state of symptoms continued for six or seven days. About the 19th, the stump became more free from pain; was improved in health. In about two days, he was seized with diarrhœa; tongue white; pulse 100. Was ordered the chalk mixture. He continued getting gradually worse. Very restless; talking in his sleep, with much muttering delirium; countenance very much flushed; lips parched, &c. He died on the 2nd of October.

Sectio cadaveris.—Cerebrum.—On removing the skull cap and dura mater, about two ounces of fluid escaped from between the

dura mater and the membrana arachnoidea. Vessels of the membrana arachnoidea very much loaded. Substance of the brain natural. About one drachm of fluid in each lateral ventricle. The substance of the cerebellum was rather flabby. Vessels less injected. Thoracic and abdominal viscera very healthy.

The limb was examined after the operation; both bones were extensively fractured, and the tibia much comminuted; several large spiculæ of bone were driven into the contiguous muscles, and the lower end of the tibia forming the ankle joint, was separated into several portions, and the joint filled with extravasated blood.

Case III.

Dec. 14th, 1830.—Wm. Morgan, æt. 30. Gun shot wound of the left hand. Came to the hospital about one hour and an half after the accident. It was caused by a foul gun bursting. The thumb was nearly torn off at its union with the os scaphoides; the remaining portion of the thumb was removed, and the bruised portions of muscle cut away. Applic. træ. benzoes co. vulneri dein emp. adhesivum c. cerat. cret.

The next day, some of the sloughy portions were removed, and catapl. commune applied. In about four days the slough came away, and healthy granulations appeared.

29th.—Applic. p. cinchome vulneri c. linteo. dein. emp. adhesiv. et cerat. cret. It has been improving ever since, and now nearly healed—Jan 12, 1831.

ARTICLE XIII.

Case of a curious Tumour attached to the Psoas Muscle, with effusion into the Abdominal Cavity.

BY MR. WALDRON, SURGEON, BATH.

Nov. 12th, 1829, I visited Lieut. H——, R. N., 38 years of age, and found him suffering great pain; his appetite and rest had entirely deserted him, and his emaciated and sallow visage bespoke more serious mischief than he or his friends were willing to believe or acknowledge. He referred constant pain and uneasiness to the back; I examined the spine, and upon pressure being made on the third lumbar vertebra, he complained of tenderness and increased pain; his bowels were irregular, and evacuations scanty. I directed 12 leeches to be applied to the part of the back affected; two pills, with 10 grains of cathartic extract, and three of calomel, to be taken at bed-time; and the following morning, an aperient draught, with senna and salts. The leeches afforded no relief, and the opening medicine produced a copious evacuation of a dark and morbid character.

15th.—Still total loss of rest; constant pain, worse when in bed; tongue white and coated, with point and edges of a deep and morbid red; pulse 70, and laboured. I now learnt that he could lie only in one position, with any degree of ease or comfort, viz. on his left side, with knees bent.

I immediately examined his abdomen, and discovered, by the touch, evident fulness on the left side, in the course of the sigmoid flexure of the colon. As his evacuations had been defective for

some weeks past, and the opening medicine I had given having brought away several hardened scybala, and as he complained of no tenderness on pressure, I thought it very probable that his sufferings were occasioned by constipation, and that the swelling on the left side resulted from it; the colon being filled and distended by indurated fœces, I immediately threw up several pints of thin gruel by means of the stomach-pump, and directed three grains of calomel and four of extract of hyoscyamus, to be taken at bed time; the following morning, a table spoonful of castor oil. A very copious evacuation was the result of this treatment, and numerous large masses of indurated fœces were brought away; he expressed himself very much relieved, and his pulse became less laboured, and countenance more cheerful.

16th.—I directed the pill to be repeated at bed time, and the following morning the castor oil.

17th.—He has passed a restless night, with no amendment whatever in his symptoms; pulse laboured, (70,) tongue foul; pain and great restlessness; entire loss of appetite; countenance anxious, sallow and sunken. I now entered into as full and minute investigation of his case as possible; I again examined the abdomen, and still detected the same swelling which I at first perceived; I also thought that fluctuation existed in it, but of this I was not convinced in my mind. Lieutenant H. stated, that for several years he had suffered from pain in the back and loins; and that for several months past it had become more frequent, but during the last six or eight weeks it had distressed him very greatly; there were periods, however, when he experienced an entire cessation from pain in the back and loins, and which lasted many hours. He attributed all his sufferings to lumbago or rheumatism, and viewed his present attack, as did his wife and mother-in-law, as a matter of no alarm nor danger. My views of the case convinced me of the necessity of suggesting to the parties that latent mischief did exist, and after a few days, I determined to make known the extent of my apprehensions, unless an obvious change for the better should, in the mean time, ensue. Upon my hinting at the probability of a tumour existing on the left side, and that Lieut. H.'s constitutional symptoms resulted from and were kept up by it, nothing could exceed the repugnance with which my views were met by the parties, and it was agreed that unless all my grounds of alarm speedily vanished, a physician should be called in. I now prescribed the following medicine:—

℞ Opii. Aloes socot. a. gr. ½. Pil. hydrarg. gr. i. Pulv. rhei, gr. iij. Ol. caryoph. gtt. ss. Misce; fiant pilulæ duæ bis quotidie sumendæ; cum haustu sequente.—℞ Infusi. rosæ, ℥iss. Magnes. sulph. ℥iss. Tinct. card. comp. ℥i. misce, fiat haustus.

As my patient's sufferings were very considerably increased, unless his bowels were daily acted on, I prescribed the medicine as above, with a two-fold object, that of affording rest, and, at the same time, keeping up an action in the bowels, whereby I hoped to observe, also, an amendment in the secretions. I allowed him a slight portion of animal food, if he desired it; also, two glasses of wine daily. He pursued this plan with an occasional slight deviation, (viz. a dose of castor oil,) till the morning of the 24th, when I met Dr. Bowie in consultation. Three days prior to Dr. Bowie's being called in, I stated to Mrs. H. and her mother, that I suspected an abscess to exist, and that I considered my patient's state

critical and alarming. At this period, when he turned on the right side, he experienced a sense of weight and pain which compelled him to return to the left side. After our consultation, I was happy to find that Dr. Bowie did not view the state of our patient in so serious a light as I had done; he approved, in a great measure, of the medicine I had prescribed, but forbid animal food and wine. From this period till the 28th, no material change took place, but on the morning of this day, Dr. Bowie and myself examined the left side of the abdomen, and discovered fulness, obvious to the eye as well as touch, above Poupart's ligament; it dilated on coughing, and receded considerably when he lay on his back. We now both agreed that the case was that of psoas abscess. The fluctuating and thready beat of the pulse, great anxiety and contraction of countenance, &c. &c. created an alarm in our minds as to the speedy dissolution of our patient. We allowed him such diet as was best calculated to support his strength; also, wine and water, which he took frequently, and much coveted, as he complained of distressing faintness.

30th.—On this day he appeared rapidly sinking, and at eight o'clock, p. m. he expired.

Sectio cadaveris.—On the left side a fulness was visible, extending from the anterior and superior crista of the ilium, to the inner edge of Poupart's ligament, and there terminating with a slight bulge. Upon manual examination after death, a very indistinct fluctuation could be felt. On making an angular incision from the symphysis of the pubis, extending to the right and left ilium, a quantity of serous fluid escaped; on the left side, upon cutting through the parietes of the abdomen, and turning them back, the peritoneal covering of the left side was closely united, and could not be detached from a dark-coloured tumour which was now partially displayed to view. It appeared to occupy the greater part of the left side of the pelvis; from the close adhesions which had formed between this diseased mass, its peritoneal covering, the colon, rectum, and kidney of the left side, very considerable difficulty was experienced in its dissection, and by no means could it be satisfactorily effected. I first separated and secured by ligature, the large arch of the colon, above where the diseased structure commenced, in two places, and having then divided it, I proceeded to trace the sigmoid flexure downwards, but this I found impossible. The colon throughout, commencing from its sigmoid flexure, was embedded in an encysted tumour, of a dark colour, and when cut into and examined, evidently consisted of coagulated venous blood; the colon and rectum were so closely embedded in, and united to, this diseased mass, that they could not be separated from it; and appendiculæ pinguedinosæ throughout the whole course of the colon, even to some distance above the tumour, extending to its large arch, resembled so many black grapes, and when cut into, were found filled with dark-coloured venous blood. These bodies were found so closely adhering to the tumour, that it was impossible to separate them from it. The tumour was situated on, and adhering to, the psoas magnus muscle, extending to, and enveloping, the left kidney, and appearing to take the course of the mesentery, filling up the loose fold which retains the sigmoid flexure of the colon, and passing downwards as far as the mesentery extends towards the rectum. It would appear that the mesentery thickened and condensed by chronic inflammation, formed a capsule for

the tumour. The colon and rectum, when cut into and laid open, appeared healthy within. The whole of the intestines were highly vascular, and bore marks of inflammatory action, but more especially the large ones. The liver was of a light grey colour; the left kidney was very much diminished in size, and was surrounded by a yellowish substance, similar to pus. The spleen was of a light grey colour. A very considerable quantity of fluid was found in the abdomen, which, during the attempts made at dissecting out the tumour, became mixed with the coagulated blood, and added greatly to the difficulty in making a clear and satisfactory display of the parts, and rendered it impossible to discover the source of hæmorrhage.

Observations.—The history which Lieut. H. gave of his case, also the situation of the tumour, which dilated on coughing, left no doubt on the minds of Dr. Bowie and myself, that our patient laboured under psoas abscess. The inspection of the body proved that we had erred in our diagnosis; and the vast use and necessity of post-mortem examination, whenever the slightest doubt or intricacy respecting the nature of a complaint, exists. The very rapid termination of this disease, was accounted for, in my mind, by conceiving that the abscess which I supposed to exist, had given way, and extravasated its contents into the abdomen; and I therefore felt a regret that I had not given Mr. Abernethy's plan of treatment in such cases, a trial, by which I believed that I should at least have prevented the internal rupture of the abscess, and in all probability have prolonged life. Had I pursued this plan, how distressing would have been both the situation of my patient and myself.

Was the tumour in question aneurismal? If it was not, what was its nature, and how could it have been formed? That it had been forming for some years, I think, is pretty clear, from the history of the case given by Lieut. H.

ARTICLE XIV.

PAROCHIAL RETURNS of Births, Marriages, and Burials, that have been registered in the several parishes of the City and Suburbs of Worcester, including those of the several congregations who dissent from the Established Church, between the 1st of October, 1830, and the 1st of January, 1831.

Births, 206; Marriages, 118; Burials, 185.

NOTICES AND ACKNOWLEDGEMENTS.

The Editors have received a letter from Dr. Darwall, of Birmingham, in which he requests them to state that Dr. Marshall Hall has written to him, to claim priority of notice of the species of Paralysis described by Dr. Darwall, in the 10th No. of the Reporter. It appears that Dr. Marshall Hall had seen one case of this affection, which he noticed in his work on Diagnosis, published in the year 1807.

The Editors regret that they are again compelled to omit several important Articles, which will appear in the 12th No. viz. Dr. Burne on the Pulse; a letter from Dr. Malden to Dr. Hastings, on the state of the circulation in the Lungs previous to the formation of Tubercles; a description of the Aurora Borealis, as observed at Malvern, by Mr. Addison; a quarterly Report of the Birmingham Eye Infirmary, by Mr. Middlemore; a paper on Transfusion, by Mr. Perrins, Surgeon, Cheltenham, &c.

All Letters and Communications, addressed, free of expense, (under cover,) to the Editors, at the office of the Worcester Journal, will receive immediate attention.

The Twelfth No. will be published on the 1st of May, and the succeeding Numbers Quarterly.

THE MIDLAND

Medical & Surgical Reporter,

AND

TOPOGRAPHICAL AND STATISTICAL JOURNAL.

HOMO, NATURÆ MINISTER ET INTERPRES, TANTUM FACIT ET INTELLIGIT, QUANTUM, DE NATURÆ ORDINE, RE VEL MENTE OBSERVAVERIT; NEC AMPLIUS SCIT, AUT POTEST.—BACON, NOVUM ORGANUM.

No. XII. MAY, 1831.

To the Editor of the Midland Medical and Surgical Reporter.

SIR,

THE matter of the enclosed paper is the result of some dissections and experiments made, three years ago, on the structure and motions of the heart; and of clinical observations, for several years past, on the indications of the pulse.

The substance of this dissertation was read before the Physical Society of Guy's hospital, in October, 1828; I have been reminded of the subject by some articles which have recently appeared in the Medical Journals, and am induced to request the publication of the paper in your periodical, more on account of the subject of the heart being, as it were, at this time, before the profession, than from any merit in the production itself; as, but for the reason stated, I should consider it too imperfect to deserve notice; the last part more particularly, which, indeed, is but the nucleus of a treatise I hope to present to the profession, at no distant period, on the practical indication of the pulse, in the diagnosis and treatment of disease.

I have the honour to be,
Sir,
Your obedient, humble Servant,
JOHN BURNE.

24, Spring Gardens, London,
January 8, 1831.

On the Structure *and* Motions *of the* Heart, *and on the* Indications *of the* Pulse.

Although exactly two hundred years have now elapsed since our British Hippocrates, Harvey, published his discovery of the circulation of the blood,; it is a matter of wonder that so little advancement has been made in our practical knowledge of the indications of the pulse. And not only is our knowledge of the circulation backward and imperfect in this particular, but also in relation to the heart itself, and to the arteries; for our notions concerning the structure, action, function, and motions of the heart, and the structure and action of the arteries, are nowise settled: and, from the observations and experiments I have recently made on the motions of the heart, I am led to call in question the generally received opinion of the pulsation of the heart against the parietes of the chest, being produced by the contraction of the ventricles.

Nothing, perhaps, has more retarded the progress of the science of the pulse, than the hacknied remark of Celsus, "Venis enim maximè credimus, fallacissimæ rei;" which has received such continued sanction, as to be almost admitted a maxim in medicine. And so general is this notion of the fallacy of the pulse, that a person pretending to a nicety of discrimination, is almost jeered at as one fancying he knows that which is not attainable.

The character of the pulse is mainly derived from the heart; and will it be said that the indications of this organ are deceptive or not appreciable,—of this organ which is the fountain of life, the great engine of the circulation, and the ready sympathiser with every disturbed action of the body? We must admit the position is not tenable. There have, nevertheless, been individuals who have turned to great account the indications of the pulse; and I am glad to say that the value of these indications is fully estimated by many at the present time.

The most formidable obstacles to a knowledge of the pulse, is the indeterminate nature of its character, for, as is remarked by Mr. Hunter, "there is but one circumstance attending it that we can really measure, the frequency of pulsation in a given time; all the others being referable to the sensation or feeling of the person who is to judge of it." Much, therefore, must depend on the nicety of the touch, in the proficiency at which persons may arrive in discriminating the peculiarities of the pulse. It is the same with the ear as with the touch, for the ear which is nice, and accustomed to the harmony of sounds, will detect a discord which another person cannot perceive. But as the ear is improved by practice, so may the touch be.

The two Hunters offer a striking instance of the different powers of persons in discriminating the pulse. Dr. Hunter, though extremely accurate in most things, could never feel that

nice distinction in the pulse that many others did: but Mr. Hunter, on the contrary, says, "I think I have been certain of the pulse having a disagreeable jar in it, when others did not perceive it; when they were only sensible of its frequency and strength."

Of the Structure of the Heart.

The heart is a hollow muscular organ, situated in the middle of the chest, between the lungs, and enclosed in its peculiar capsule, the pericardium. It is truly said to be rich in vessels, but poor in nerves, and is composed of several cavities, which communicate with each other directly by continuation; or indirectly, through the medium of the greater or less circulations. It is the point of re-union of the great blood-vessels of the body, the veins terminating in some of its cavities, the arteries arising from the others.

Like the other muscles of the body, it is made up of muscular fibre and tendon; but, unlike them, its tendons and muscular fibres are so curiously arranged, as to give to the heart some striking peculiarities of structure.

The form of the heart is that of a cone, or irregular pyramid. Its average weight is estimated at about ten ounces, and its size is considered by Laennec to be equal to the size of the clenched hand of the subject, or it may be a little larger or a little less.

The exact position of the heart in the chest, is oblique from right to left, from behind forwards, and from above downwards, so that its base lies nearly opposite the eighth dorsal vertebra, and its apex corresponds to the cartilage of the sixth true rib, or the next intercostal space below. Its inferior surface corresponds with the superior surface of the tendon of the diaphragm, and its superior, to the middle or left portion of the anterior parietes of the chest.

The heart is one of those muscles which, according to the division of Bichat, belongs to the muscular system of the organic life; and, according to that of Beclard, to the internal muscles; and it possesses, in a remarkable degree, many of the peculiarities which distinguish this order of muscles. The fibres, for example, are extremely delicate and fine, and are not collected into detached bundles or fasciculi; their direction is oblique, and they are united together rather by juxta-position, than by the common uniting medium, cellular tissue.

The substance of the heart, therefore, is made up almost exclusively of muscular fibre, which gives to this organ a power prodigious in proportion to its volume, and superior to that possessed by the same volume of muscle pertaining to the animal life; into whose composition cellular tissue is known to enter abundantly.

Like the muscular system of the organic life, also, the heart is most liberally supplied with blood, and scantily with nerves. Its supply of blood is derived from the fountain head; the coronary

arteries receiving their blood immediately after it has undergone the changes which best fit it for nutrition.

The nerves proceed from two sources, the brain and ganglionic system; and they principally follow the course of the arteries, forming a net-work around them.

There are anatomists, as Behrands, indeed, who deny nerves to the muscular substance of the heart, and contend that the distribution of the cardiac nerves is limited to the coronary arteries. Other anatomists, with a greater probability of truth, maintain that the cardiac nerves proceed to the substance of the heart, as nerves proceed to the substance of other muscles.

The scanty supply of nerves is less remarkable, when we call to mind the extreme tenacity of the nerves of the ganglionic system, all of which are small and exceedingly delicate, although they perform offices of vast importance in the animal economy. We must not judge of the influence of nerves by their size, more than we must judge of the powers of muscles by their volume, for as the volume of the exterior muscles, is in part made up of cellular tissue, so is the volume of the exterior nerves made up in part of neurilema; the exposed situation of the latter requiring protection, while the situation of the nerves of the ganglionic system is a protection of itself.

The heart is generally divided into right and left side. Bichat divides it into venous and arterial portions; but as the large arteries do not in any way form a part of the heart, the terms auricular and ventricular would be more correctly substituted for those of venous and arterial.

The division into right and left side, though not altogether consistent with the exact situation of the organ, is, perhaps, the best adapted for the purposes of practical medicine; and that into the auricular and ventricular portions, is more consistent with the anatomy and physiology of these parts; seeing that the auricles and ventricles are respectively united by their muscular structure, and act respectively together.

Although the minute anatomy of the heart has been investigated by many industrious men, particularly Lower, Winslow, Senac, Wolff, Gerdy, and others, it does not appear that they have hitherto succeeded in establishing any intelligible general principle as a key.

One of the last scientific men who have given attention to this subject, is Dr. Andrew Duncan; and from the success of his labours, and the intelligible views he has taken of the muscular structure of the heart, it is to be regretted he did not pursue the subject to the end, and favour the profession with the result of his researches. The result of my own dissections of the heart, accords entirely with a conclusion at which he arrived, that the arrangement of the muscular fibres of the auricles and ventricles is not confused and inextricable, but regular and easily unravelled. I have said that the substance of the heart consists of tendon and muscle. Surrounding the auriculo-ventricular orifices

and the aorta and pulmonary arteries, there are tendinous rings which may be considered to form the fixed points of the heart, and from which the muscular fibres take their origin. From these rings are given off aponeuroses, which, projecting loose into the ventricles, form the auriculo-ventricular valves, and from the edge of their valvular aponeuroses, there proceed numerous tendinous cords, several of which uniting together, constitute the tendons, into which are inserted the other extremities of some of the muscular fibres of the heart, under the form of detached masses or fleshy pillars, called the columnæ carneæ of the ventricles.

The tendinous rings, then, at the base of the heart, and the tendinous apices of the columnæ carneæ, are opposing points of the origin and insertion of the muscular fibres of the heart.

But, independent of this arrangement, part of the muscular fibres which have taken their origin from the tendinous rings, return to be inserted into them; some after having taken a shorter course around the ventricles, others after having made a spiral course around the apex of the heart, which various course has been accurately represented by Lower in his plates of the heart.

The external or peripheral fibres arise from the rings, and take a slightly oblique course from left to right, and from above downwards towards the apex, where, according to Dr. Duncan, they are reflected, and pass almost in a straight direction from the heart towards the base, and collecting together in detached masses form the columnæ carneæ. The peripheral being removed, the others are seen taking gradually a more and more oblique direction, till at length they become horizontal in the centre of the parietes. Some of the peripheral fibres partly surround both ventricles, and many of the very oblique or horizontal fibres, bifurcate, as it were, when they reach the septum ventriculorum, one branch turning in to form the septum ventriculorum, the other passing on to surround the other ventricle.

The straight fibres of the columnæ carneæ belong exclusively to their respective ventricles, but many of them are derived from the external fibres of the other ventricle by reflection. The columnæ carneæ of the right ventricle, proceed from the septum ventriculorum; those of the left ventricle, proceed from the parietes of their proper ventricle, which difference naturally results from the different position of the pulmonary artery and aorta.

The muscular fibres cannot be considered as arranged in distinct layers, although they are so described by some anatomists, as by Méckel; and there are few, if any, bundles of fibres which may be considered as distinct muscles; but each fibre is, as it were, independent. The muscular fibres are, for the most part, very long, on account of their oblique and spiral course, and many of them exceed twice the length of the heart from its apex to the base.

As then the muscular fibres of the ventricles of the heart pass from one to the other, and to the septum, and are therefore common to both, the ventricular portion of the heart must be regarded as one vast muscle, made up of fibres united together by juxta-position, rather than by cellular tissue.

The same may be said of the auricles, for the muscular fibres of one auricle pass to the other, and make them one common substance. The usual division of the heart into right and left side, is therefore not borne out by the structure of the organ, there being no natural line of separation. The muscular structure of the auricles and ventricles is distinct; the muscular fibres of the auricles never proceeding to the ventricles, nor vice versâ.

Order of the Contractions of the Heart.

The order in which the contraction of the auricles and ventricles takes place, is pretty generally agreed upon amongst physiologists. First, the auricles contract simultaneously, and are immediately succeeded by the ventricles, which contract simultaneously also, and then follows the period of repose. All these phenomena are easily observed in the frog, by vivisections; but when hot-blooded animals, as rabbits or dogs, are the subject of experiment, the order of these phenomena is less distinct, because of the uncommon frequency of the action of the heart, produced by the pain and fear; and because, also, of the difficulty of obtaining a view of the action of the heart, without wounding one cavity of the chest; which wound is of course attended by an immediate collapse of the lung, and a consequent impediment to the circulation of the blood through it; and this impediment diminishes very much the supply of blood to the left side of the heart, and causes an accumulation on the right side, whereby the heart becomes so embarrassed, that its order of contractions is not easily recognized. These inconveniences may be much obviated, by keeping up the respiration artificially.

It was this frequency and embarrassment, I conceive, which led Lancisi to differ from other physiologists, and to regard the contraction of the auricles and ventricles, as to a certain extent, synchronous with each other: for he describes them as succeeding each other so rapidly, that the contraction of the ventricles begins synchronously with the middle of the contraction of the auricles. And Laennec, relying on his accomplished use of the stethoscope, and conceiving that the motions of the heart could be examined more exactly by mediate auscultation, than by any other means, has described the contraction of the ventricles as happening first, and that of the auricles to follow instantly, and then the interval of repose: so that he has placed the repose after the contraction of the auricles, which is contrary to the testimony of experiments. This opinion was probably advanced incautiously.

Now the contraction of the auricles, I have reason to believe, is not one simultaneous act of its muscular fibres, but a successive

action, the contraction commencing in the sinus venosus, and ending in the appendix, or proper auricle. This I have observed in the rabbit. The same order of contraction was observed by Haller, and by Dr. Knox, also in the heart of the shark; and, should further experiments confirm this point, it will materially contribute to determine the degree of the influence of atmospheric pressure on the circulation of the blood, as proposed by Dr. Barry. This order of contraction in the auricle is an additional example of the wonderful and wise provision of nature, in the mechanism of the human body; for by it, the mouths of the great veins are closed, and regurgitation prevented, so that the whole force of the action of the auricles is thus brought to bear on the propulsion of the blood into the ventricles. It will account, also, for the absence of pulsation in the large veins, when the heart has not been disabled by disease.

Motions of the Heart.

Attending the action of the heart, there are two consecutive sounds or succussions, which are followed by the interval of repose, and then the two sounds or succussions again take place. The two sounds are distinctly heard by the stethoscope, and the two succussions are generally to be perceived by the hand placed on the side; though the second succussion is difficultly perceived in some persons, readily in others. It is at the moment of the first succussion that the heart strikes the ribs, and as the stroke of the heart against the parietes of the chest, has always been considered synchronous with the pulse, it has been almost universally received as a proof that the first succussion arose from the contraction of the ventricles. Such was the opinion of Laennec, and he accordingly attributed the second sound or succussion to the contraction of the auricles: but this cannot be, because, by vivisection, it has been shewn that the contraction of the auricles precedes that of the ventricles. Mr. Turner, in a paper published in the Transactions of the Medical and Surgical Society of Edinburgh, has hazarded a conjecture relative to the manner in which this second sound or succussion is produced. He says, "can the second succussion be accounted for by the impulse occasioned by the falling back on the pericardium of the relaxed heart in its diastole, after it has been elevated or moved from its place in the systole?" This conjecture appears to me very improbable. From the action of the heart in the frog and rabbit, and from some circumstances which have presented themselves in the human body, it sometimes even appeared that the first sound or succussion was the result of the contraction of the auricles, and consequent dilatation of the ventricles, and that the second sound or succussion was the result of the contraction of the ventricles.

I am fully sensible that this question is one of difficulty, and requires much observation and patient thought, before bringing one's mind to a decision. I confess myself to be undecided, at the

present time, and will therefore only adduce the evidence which has led me to doubt; and will wait the result of further experience to explain the difficulties which involve the subject.

In the frog, the ventricle is so forcibly and copiously filled by the contraction of the auricles, that its size is suddenly increased double; an action likely to cause the heart to strike the chest.

In the rabbit, I have thought the heart might be felt to strike the chest, at the instant the auricles were seen to contract; but I do not insist on this point, because artificial respiration was not kept up during the experiments. In the human subject, I have many times been unable to determine, whether the impulse of the heart against the chest, was synchronous with the pulse or otherwise; on some occasions, the synchronism has been manifest, on others, the reverse. I was more particularly struck by the phenomena which were noticeable in a case of aneurism* of

* The particulars of this case of aneurism, are as follows:—

Aneurism of the ascending Aorta; pulsation of the Aneurism synchronous *with the Pulse at the wrist, and successive to the stroke of the Heart against the Chest.*

Charles Norton, aged 35, a glass-cutter, is a muscular square-built man, five feet three and a half inches high. Complains of having a pulsating tumour on the right side of the sternum, opposite to the pulsations of the heart on the left side, which latter is distinct and natural. The pulsation on the right side is much more striking and strong than that on the left side, and is diffused over the area of a circle from 4 to 5 inches in diameter, the centre of the circle being midway between the sternum and right nipple. The elevation of the ribs from the pulsation on the right side, and the elevation of the intercostal space on the left side, from the natural action of the heart, are not synchronous, the elevation on the right side being successive to that on the left; but the pulsation on the right side is synchronous with the pulse at the wrist; the pulse, therefore, is successive to the stroke of the heart, seen by the elevation on the left side.

He complains of pain in the chest, behind the tumour, on the right side, which goes through to the back: it is constant and shooting, and much increased by exertion; when the breathing becomes affected. He lies on the right side; is unable to lie on the left. The face is rather bloated; the tongue is clean; and there are no signs of dropsy, except the puffiness of the face; the pulse is rather firm, does not exceed 60, the stroke is rather hesitating.

May 26, 1828.—He had no complaint in the chest as lately as nine weeks ago; though he remembers that two years previous, he fell, and struck his breast, which caused severe pain for ten minutes, when it subsided, and nothing has been felt of it since. The first sign of his afflictions was a pain in the right side, on running fast, or going up stairs; and for which he was bled seven times, and had leeches. At the expiration of ten days, a pulsation was discovered on the right side, which, he says, was increased by the blood-letting; and, from this period, the pulsating tumour has gradually formed.

By very moderate blood-letting, and by lying raised in bed, inclining to the right side, the pain has been mitigated, and the pulsation in the tumour diminished; and he fancies he finds relief from a tight bandage round the chest.

the ascending aorta, which presented itself on the right side of the sternum, opposite to the heart on the left side. The pulsation of the aneurism was evident and strong, and it happened that the pulsation of the heart was evident also; and when these pulsations were compared, the chest being bare, it was found that the pulsation of the aneurism was successive to that of the heart, while it was synchronous with the pulse: the stroke of the pulse, therefore, was successive to the stroke of the heart. Here is evidence of a very conclusive character apparently, yet it must not be received without reserve, because, as the blood in the aneurismal sac is at rest, except when put in motion by the stroke of the heart, time would be required for the impulse of the heart to arrive at, and be apparent in, the presenting aneurism, which time may possibly be equal to the interval between the stroke of the heart, as seen in its proper intercostal space on the left side, and the pulsation of the aneurism, as seen at the presenting point on the right side.

This view of the action of the heart, is rather supported by the testimony of mediate auscultation, and by the description given by Laennec himself, whose description is accurate, although he came to a different conclusion.

If the stethoscope is applied to the cardiac region, the ear is slightly raised by the motion of the heart, and accompanying this is a sound somewhat dull, but distinct and gradual: immediately after, and without any interval, is heard a sound more sharp, and analogous to a valve raised, the crack of a whip, or the lapping of a dog; but no motion sensible to the ear accompanies this sound. During this second sound, or succussion, the heart is felt to retire suddenly deep within the chest, which accords with the retiring of the heart from a diminution of its volume, by the contraction of the ventricles.

In the middle of July, he complained of beating on the right side of the head, and of giddiness; and, on the 15th of the same month, after having passed a restless night, he brought up a large quantity of blood, which recurred at intervals till the 1st of August, when he expired.

Sectio cadaveris, forty-three hours after death.—A large aneurismal sac was discovered on the right side of the chest, proceeding from an opening, the size of a crown piece, in the aorta, situated in the outer sinus, behind the semilunar valve. The sac was formed by the adhesion of the pleura, and was imbedded in the right lung, the pleuritic covering of which it had perforated. In the upper part of the sac were layers of coagula, and a recent coagulum filled the remainder. This lung (the right,) was firmly and universally adherent to the costal pleura, and to the mediastinum, and at its lower part was hepatized and consolidated by tubercular deposit, in which were small vomicæ. In the substance of the lung was a black sanious fluid, the result, no doubt, of the extravation of blood through the perforation already described, and the cause of the hæmoptysis. The left lung was sound.

The pericardium adhered universally.

Of the Indications of the Pulse.

The character of the pulse depends on three circumstances, namely, the volume of blood sent forth by the left ventricle at each contraction of the heart; the force with which that blood is propelled; and the degree of tonicity of the artery. These causes, together with the frequency of the heart's action, give rise to all the varieties of the pulse. The character of the pulse is, moreover, modified by the state of the skin, according as its temperature is high or low, or as it is dry and contracted, or relaxed and perspirable.

The volume of blood sent forth by the ventricle at each contraction, is necessarily regulated by many circumstances: as by the supply of blood which that ventricle receives, and by the area of the mouth of the aorta, &c. The supply of blood may be abundant, from a general fulness of the system, and activity of the circulation; or scanty, from an opposite state of things. The supply may also be deficient, from a diseased condition of the lungs opposing the transmission of blood from the right to the left side of the heart, or from a narrowing of the auriculo ventricular opening. The area of the mouth of the aorta may be diminished by disease of its valves, or increased by dilatation. All these different circumstances influence the character of the pulse, and the pulse, therefore, becomes an indicative sign.

Notwithstanding the pulse is mainly produced by the action of the heart, it does not always correspond with that action. The action of the heart will sometimes be impetuous and strong, while the pulse is small and weak; as in a narrowing of the orifice of the mitral valve from cartilaginous or osseous deposit.

The various characters of the pulse may be represented by the following designations. It may be strong, weak, hard, soft, wiry, sharp, harsh, grating, jarring, vibrating, falling back, fleeting; or full, large, small, thready; or yielding, open, coutracted, tight; or rapid, frequent, accelerated, slow; or it may be quick, free, equal, unequal, regular, irregular, hesitating, labouring, intermittent, fluttering.

Each of these terms designates some notable peculiarity of the pulse; and as they are numerous, and as most of them cannot be measured except by the sensation produced in the mind, it follows that the accuracy of this measurement must depend on the skill of individuals, and hence the difficulty of an acquaintance with the science of the pulse. But although the task is difficult, it may be accomplished by diligence and perseverance. The ready use of the stethoscope, requires the ear to be educated; and an education of the touch, is necessary to a correct judgment of the pulse.

If time can be profitably spent in acquiring a knowledge of mediate auscultation, much more may it be so spent in acquiring a knowledge of the pulse; because the pulse is one of the most prominent signs in disease, and one of the most certain indica-

tions in the treatment. Without the assistance of the pulse, we cannot advantageously, or even safely, employ blood-letting, which is the most powerful of all our remedial agents, the most beneficial when judiciously prescribed, the most fatal when prescribed in error.

The characters of the pulse are produced by three causes; the heart, the volume of blood, and the artery; and as these causes always operate, it follows that every given pulse must have several characters. Thus, the same pulse may be strong, full, and firm; the strength resulting from the heart, the fulness from the volume of blood, and the firmness from the tonicity of the artery.

Of the terms already specified, some belong to the heart, some to the volume of blood, some to the artery, and some to these causes combined.

Those which depend upon the heart, are *strong*, *weak*, *sharp*, *jarring*, *rapid*, *frequent or accelerated*, *unfrequent*, *quick*, *slow*, *equal*, *unequal*, *regular*, *irregular*, *hesitating*, *labouring*, *intermittent*, *fluttering*.

Those which depend upon the volume of blood, are *full* and *small*.

Those which depend upon the artery, are *contracted*, *tight*, *yielding*, *open*, *harsh*, *grating*.

Those which depend upon the above causes combined, are *hard*, *soft*, *wiry*, *vibrating*, *falling back*, *fleeting*, *thready*, *large*, *compressible*.

The pulse, in health, beats about 72 strokes in the minute, or thereabout, and the number varies a little in the course of the day and night, being rather more than 72 in the evening, and less than 72 before rising in the morning. Its natural character is *equal*, *regular*, *soft*, and of *moderate strength and volume*.

In the deviations from health, the pulse varies in character according as the nervous or sanguiferous systems are prominently affected, or as both are affected simultaneously; and it is this difference which gives rise to that peculiarity of pulse, which surgeons meet with so frequently after the shock of an accident or operation, and which is known by the term, *irritable pulse*, or *pulse of irritation*. This pulse derives its peculiarity from the excitement of the nervous system; and its character may be described as follows: it is frequent, the stroke is quick, short, rather sharp, but not strong, the impression on the finger being rather smart but not lasting. Its volume may be small or otherwise, but is never full.

There are many diseases and conditions of the body which are accompanied by a particular kind of pulse, and in some of which the peculiar pulse is in part diagnostic. As for example, the pulse accompanying pneumonia, pleurisy, apoplexy, and depression of the scull from fracture; concussion of the brain, adhesion of the pericardium, valvular disease of the heart, and that succeeding sudden hæmorrhage, and therefore called the hæmor-

rhagic pulse. This last is of so much importance, as to deserve our best attention: for the efforts of the heart to keep up the circulation, after sudden and copious hæmorrhage, give a character to the pulse, which is apt to be regarded as indicative of increased power, and so to lead to error in practice.

The hæmorrhagic pulse is frequent and open, and the stroke is quick and rather smart, but short and falling back, and leaves but a slight impression on the finger. This open character is sometimes mistaken for a full pulse, and the quick and rather smart stroke construed into strength, which may tempt a practitioner to abstract blood, while the symptoms are already produced by the loss of blood: but the slight impression upon the finger, and the sensation of falling back after every stroke, will at once determine that there is a deficiency of strength and volume of blood.

The pulse of an intense pneumonia, is the best example which can be furnished of a full pulse, the very nature of the disease causing, in the early stage, a very abundant supply of blood to the left ventricle.

Pleurisy offers an example of a firm pulse; so also do some cases of concussion of the brain, during the succeeding inflammatory stage.

The adhesion of the pericardium is attended with so peculiar a pulse, as to be a diagnostic sign. It is generally said that there are no signs by which the adhesion of the pericardium can be detected; and this is true to a certain extent. It is true, for instance, where the adhesion is by the medium of a rare and loose cellular tissue which allows the free motion of the heart; then there are no signs, because the action of this organ is not interfered with; but where the adhesion is firm and close, it so impedes the action of the heart, as to give a decided character to the pulse. The pulse, under these circumstances, is frequent; the stroke is unpleasantly sharp; is quick and strong more or less, and more or less full.

In ascertaining the nature of the pulse, we must be circumspect, and take care that we are not led into error by any accident or idiosyncracy: for instance, any inflammation of the finger, or rheumatism of the wrist, will affect the pulse of the affected arm; or if one arm has been lying out of bed, while the other has been covered, the pulse in the two arms will differ exceedingly; or there may be a naturally vigorous stroke of the heart, which is usually attended with a thick strong artery, and so on.

The characters of the pulse which I have attempted to draw, will, I am afraid, be regarded by some as unnecessarily minute; and they may appear difficult to become acquainted with: but they will easily be made familiar by patience and industry; and the satisfactory, and I may add, practical information, which I have gleaned in proportion as I have devoted time and attention to the contemplation of the characters of the pulse, urge me to recommend the study of its indications as leading to the acquisition of valuable knowledge.

ARTICLE II.

CONTRIBUTIONS TO PATHOLOGY.

Very large Abdominal Tumour, with displacement of the Stomach.—Rupture of Cysts into the Alimentary Canal, and the Cavity of the Abdomen.—Abscess in the Liver, passing through the Diaphragm and Lungs.

BY JOHN BARON, M. D., F. R. S.

Physician to the General Infirmary at Gloucester, &c.

In a former communication which I sent to you, I pointed out the commencement of a very distressing variety of abdominal disease.* I now transmit to you a few remarks, calculated to illustrate the terminations of such affections.

The first case I shall mention, is that of a woman about fifty years of age. The disorder, as is generally the case, was not discovered 'till it had made some progress. It was then found, on examination, that several well-defined circular bodies occupied the lower part of the abdomen. Notwithstanding every effort to arrest their progress, the growth was rapid, and they ultimately acquired a magnitude greater in proportion to the rest of the body, than any tumour I have heard of. From the commencement, it was very clearly made out that it was composed of cysts of different sizes. Some of these cysts it was necessary to tap more than once, in order to relieve the patient from the painful effects of the increasing distension.

I may here mention an incident, connected with the passing of the trochar after death, in order to facilitate the dissection, which, had it occurred previously, would have been followed by the most afflicting consequences. One of the large cysts seemed to occupy the right side of the abdomen. It was thought advisable to empty this in the first instance. The instrument was, therefore, pushed in, but no fluid followed. The cause of this was clearly explained on pursuing the examination. The adventitious growth was so enormous, that it pressed up the diaphragm and the ribs, and forced the stomach out of its natural situation into the right side, its great curvature extending in a line from the margin of the ribs towards the ilium. In this situation the instrument was inserted. It transfixed the empty stomach, and penetrated the diseased mass beyond. It would have been truly frightful to have seen the poor creature's sufferings brought to an end by such an operation as this, had it been performed, as it really might have been, during her life-time. She had more than once been tapped on the opposite side; and no one could have anticipated such an occurrence as was met with in the other.

* See vol. i. p. 247.

A crucial incision was next made through the integuments and muscles. The tumour was found very generally adherent to the peritoneum. After this adhesion had been partly separated, a cyst of considerable size, which manifestly contained fluid, was discerned. It was punctured, and about thirty pounds of a chocolate-coloured fluid were withdrawn. This was the cyst that had been repeatedly punctured during her life. On continuing the investigation a little farther, the displacement of the stomach was discovered, and, at the same time, the point where it was transfixed by the trochar. After some little difficulty, nearly the entire of the disorganization was removed. Its weight, independently of the fluid previously abstracted, was more than sixty pounds; so that the full weight must have been more than ninety pounds.

This immense mass was made up of a congeries of hydatids or vessels, or cysts of different magnitudes, and in different stages of their progress. The smallest were not larger than a garden pea, while the largest was of such capacity as to contain nearly 30lbs. weight of fluid. A great number were perfectly pellucid, and contained a thin watery fluid. Some of them, likewise, enclosed smaller cysts. These latter were in some instances consolidated, being nearly of the density of cartilage. In others, the cyst or sac was thickened and opake; the contents being thick and glairy in some instances; in others, yellow or purulent-looking; in others, the cavity had a cellular appearance, and was filled with a gelatinous-looking substance. In another portion, where the vesicles or cysts had grown together and pressed upon each other, the original globular form was lost, and the section of the diseased mass shewed all the varieties above-mentioned, but in a more advanced stage. The agregation of the elementary parts, in some places, was so complete, and the approach towards consolidation was so great, that a complete schirrus was nearly formed. The progress towards this state was quite discernible, the septa being formed by the original boundaries of the separate cysts, pressed and squeezed together by their respective growth, and giving a varied aspect to the morbid part.

The manner of the growth of this huge tumour was distinctly proved by its history. A few separate cysts were at first formed. Their boundaries could even be traced through the parietes of the abdomen. As they increased in size they approximated and united. The consequence was, that *at last, the original* inequalities of the surface could not be detected through the parietes, and a superficial examiner, on seeing the tumour removed from the abdomen, might imagine that the whole was enclosed in one sac or cyst. This fact illustrates a statement which I have often made, by shewing how the boundaries of parts, originally distinct or separate from each other, may be lost as the disease advances.

I crave your indulgence while I deliver a few remarks, suggested by the morbid appearances which I have now imperfectly described. The pathology of diseases of this kind is better understood than it was. Like every other subject in nature, it is very simple in itself; and I have always looked upon such cases as valuable, from the light they throw upon this branch of pathology. They mark, in a very striking manner, both the primary condition of the disorganization, and many of the changes that it subsequently undergoes. Without, at present, insisting on the original formation of cyst, or vesicle, or hydatid, as they may be called, it is sufficient to remark that such bodies unquestionably constitute the elementary form of a great number of disorganizations. They are found, under various modifications, in most of the textures of the body, and are, perhaps, the cause, in one form or another, of greater deformity and danger than any other change of structure we meet with.

The growth and character of these bodies, of course, is materially affected by the organ or situation in which they are formed. But, making every allowance for such accidents, there is enough of regularity and uniformity in their history and progress, to establish the *principium* just laid down, as an axiom in pathology. I believe it to be very different in its origin, progress, and termination, from other disorganizing processes. It may frequently be complicated with them, but the consequences are, of course, different from what they would have been, had no such complication existed.

It has always appeared to me, both in reference to sound physiological and pathological knowledge, and to real beneficial practice, that our minds should ever be alive to this distinction. Notwithstanding all that has been said on this subject, I perceive that there are many men, and these, too, of considerable name in the profession, who do not hesitate to ascribe appearances, opposed to each other in every respect, to one common cause. There are still individuals who would place such an enormous adventitious growth as that which has given rise to these observations, as a consequence of inflammation. Nothing but the absence of better information, and the desire to afford some explanation of an obscure subject, can account for the prevalence of this error. It is demonstrable, by numberless proofs drawn from man, but still more by those which may be obtained from the inferior animals, that nothing like inflammation attends upon cysts in their primary condition. These bodies may be found in the centre of a viscus, or on the surface of a membrane, the surrounding parts being as free from all trace of disease, as if no such bodies existed. There is neither pain, redness, fever, nor any such derangement of the functions of the body, as invariably attends inflammatory action, especially when it proceeds so far as to effect an alteration in the textures of the body. You shall see a cyst as large as an egg, for example, imbedded in the liver, with its transparent coats and pellucid contents. The viscus in

which it is found, is, in no other respect, altered. Its colour is not changed, its investing membrane is as smooth and flexible as ever, and the proper glandular texture will be found perfect up to the point of closest contact with this new formation. Is such a condition of things, let me ask, compatible with the existence of inflammation of any kind or degree? I am well aware that such occurrences are not often met with in man; and for this simple reason: death seldom takes place whilst these adventitious bodies are in their primary stage, and, when they proceed so far as to lead to death, they, as well as the surrounding parts, are in a very different state from what they were in their more early stages, at their commencement.

It is scarcely necessary to remark, that every body, foreign to the original structure of the animal frame, though it may have occasioned little disturbance at first, must, especially if situated in connexion with parts essential to life, become the source of the greatest disturbance to the constitution, and ultimately of its destruction; but I do believe, from multiplied observations, that such bodies, at the onset, may exist, with little or no perceptible injury to the animal. The train of actions which subsequently may arise and alter *their* nature, as well as that of the surrounding parts, it is not my object at present to insist upon. I rest my argument on the undeniable fact, that there are stages in the history of encysted disorganizations, which compel us to ascribe them to a principle *sui generis;* not to be confounded with alterations of structure where no such bodies exist. I would, by no means, deny that, when these *are* formed, they become liable to inflammation and its consequences, as well as other parts; but it must ever be remembered that the results of inflammation are very different, whether it attacks a part which had previously undergone a disorganizing process, or a part whose structure had not previously undergone a change. The case which I am about to record, will very satisfactorily illustrate this statement; and, were this a fit opportunity, the point might be established by as great an accumulation of evidence as can be brought to bear on any pathological question.

The next case which I shall mention, belongs to the same family with that just detailed. The termination of the disease was, however, unusual; and, on that account, as well as from the instructive character of the morbid appearances, it may be worthy of being recorded.

The patient was a woman about thirty-seven years of age. She was admitted into the infirmary on the 30th of last Sept. The character of the disorganization under which she laboured, was easily discovered. The lower part of the abdomen was occupied by a tumour of considerable size. On passing the hand over it, an inequality was detected, both as regarded its surface and its consistence. That portion of it which occupied the right iliac region, was hard, and well-defined, and immovable; that which lay on the left side was soft, more diffused, and

afforded a distinct sense of fluctuation. There was great tenderness over the surface of this part of the tumour, and frequently distressing dysuria.

There are great varieties in the rapidity of the growth of disorganizations of this kind. In the present instance, three years, according to the account of the patient, were required to bring it to its present size; during the last six months it had advanced more than in all the former period. The bowels act with difficulty; but she affirms that the *catamenia are regular*.

I need not trouble your readers with regular details of the treatment of this case, but shall state generally the remedies employed, and the result. Leeches to the anus, and to the painful part of the abdomen, were repeatedly applied. The hydriodate of potash was used both externally and internally, and the bowels were kept open by saline aperients. These remedies were employed steadily for a month; the result was a diminution of the tenderness of the abdomen, and of the dysuria. The swelling on the right side, likewise, became softer and more moveable. On the 30th of October, the internal use of the hydriodate of potash was discontinued, and a solution of the chloride of potass was substituted. Under this treatment the general health improved, the swelling lessened, and both the bladder and the bowels acted with greater regularity. About the 13th of November, the pain in the tumour returned, and was followed by a considerable increase of size. Repeated applications of leeches were necessary, and the other remedies were continued till the 7th of December. The strong mercurial ointment was then substituted for the iodine ointment, and the tincture of iodine for the chloride of potass. By these means the tumour was again diminished in size, and the local distress much mitigated: so much so, that she asked leave to go home on urgent private affairs. She was absent from the infirmary for nearly three weeks, having returned on the 8th of January.

On the 14th she was seized with rigors, followed by heat of skin; then came on nausea, and frequent discharges from the bowels of a dirty greenish-coloured fluid. There was, at the same time, a marked reduction in the size of the abdominal tumour; but increased tenderness over its surface. Leeches and fomentations were applied to it, but without much benefit. Next day it was manifest that the whole surface of the peritoneum was affected; there was great constitutional irritation; rapid pulse; foul tongue; great prostration of strength, and all the symptoms of an alarming disease. She was bled at the arm; a blister was applied to the epigastrium; and a draught, containing liquor opii, manna, and tartrite of soda, was given every six hours. These remedies relieved the soreness and the irritation of the bowels; but on the 19th, she was seized with sickness, and copious vomiting of a dark green fluid, very much like that which had been passed per anum. After these last symptoms occurred, the patient only lived about two days. Before her death, the abdomen became again considerably tumefied.

The events which have been detailed, led clearly to a knowledge of some of the changes that had taken place. The discharge of the fluid from the anus; the shrinking of the abdominal tumour, and the subsequent vomiting, convinced me that one of the cysts had given way into the intestine. Such occurrences I have repeatedly met before, but death had, in no instance, followed. The cause of the mortality, in the present instance, will be sufficiently explained by the account of the morbid appearances.

On examining the body, the abdomen was found much distended. After cutting through its parietes, a large quantity of a dark fluid, having a very peculiar smell, and mixed with flakes of coagulated lymph, escaped. On throwing back the flaps made by the incision, several large cysts came into view, which occupied the lower part of the abdomen and the pelvis. The peritoneum was inflamed, and adhered, in several places, to the surface of the cysts. The intestines were forced upwards by the cysts, and adhered both to the latter and to each other. The bladder was likewise found high above the pubes, and expanded and flattened in such a manner by the pressure of the cysts, as to cover a considerable portion of their lower surface; so much so, indeed, that had any attempt been made to perforate either of the cysts at any point within two inches of the pubes, the bladder must have been transfixed. From circumstances unnecessary to mention, the examination was obliged to be performed in a hurried manner. In consequence of this, the most important morbid parts were quickly removed from the body: the opening, therefore, by which the contents of one of the cysts had passed into the alimentary canal, was not satisfactorily made out. There was a very close and strong adhesion between one cyst and the rectum; but it was not at that point that the communication took place. This portion of the rectum, with the uterus and its appendages, the bladder and the whole of the adventitious growth, were then removed. This growth consisted of two large cysts; some smaller ones; and several solid tumours of different sizes. The parietes of the larger cysts were, in some places, very thin; in other places they had become very firm, and were three-quarters of an inch in thickness. In the posterior portion of that one which occupied the right iliac region, there was an ulcerated opening, more than half-an-inch in diameter, which permitted its contents to escape into the cavity of the abdomen; the character of the fluid in both cavities being alike.

Attached to the posterior part of the left cyst, were two smaller ones, each having thin and transparent coats; and the contents clear like water. There was another cyst adjoining these, about the size of a cricket ball. The contents were of a dark brown colour; and the coats were thickened and changed like those of the larger ones. In the fundus of the uterus there was a small tumour in a schirrous state, about the size of a horsebean; and not far from it there was another, as large as a pigeon's egg, in a similar state. Both fallopian tubes were thickened and en-

larged, so as to admit, with ease, a full-sized urethra bougie. The remains of the left ovary were found attached to one of the cysts, but the right ovary was so much enveloped in the diseased mass, that it could not be distinctly traced.

The affinity between the two cases which have just been recorded, will be apparent to any one who is capable of judging on the subject. The immediate cause of death, however, was different in each. In the former, life appeared to have been extinguished almost by the mechanical influence of the enormous morbid growth. The stomach was pushed out of its place; the chylopoietic viscera were compressed, and their functions, of course, imperfectly performed. The pressure was nearly as great on the organs of respiration and of circulation; but there was no such alteration in the structure of any important organ as to be incompatible with life.

In the second case, the main inconvenience connected with the growth of the disorganization, arose from its pressure on the bladder; but this, probably, would not have led to a fatal termination, nor is it likely that such an event would even have followed the rupture of one of the cysts into the alimentary canal, had it not been connected with another opening into the cavity of the abdomen. I can call to recollection a considerable number of cases where the former event had taken place, and the patients did well. The case of one of them I published in my "Illustrations," as having been cured by iodine. This woman has remained free from any return of the disease; and has since married and borne several children.

The ulceration of a cyst, and its rupture into the abdomen, is an occurrence not so often met with. The history of the case proved that there had been frequent attacks of inflammation, both about the peritoneum and the cysts, and to this circumstance is to be attributed the destructive change which allowed the contents of the cyst to be discharged into the abdomen.

The case I am now about to detail, is not of very frequent occurrence. It would have been more complete, had I been permitted to watch the disease to its termination: but the patient insisted on being removed from the hospital before that event took place. The symptoms, nevertheless, seemed to justify the diagnosis formed.

The patient was a woman, aged thirty, and was admitted at the infirmary on the 11th of last November. I will merely give an abstract of the symptoms and treatment, as I am anxious to direct attention mainly to that part of the case on which its interest chiefly depends.

The most prominent symptom, then, was the frequent discharge by the mouth, of a considerable quantity of a yellowish purulent-looking matter, occasionally mixed with blood, or, as she herself termed it, of *bloody corruption*. This discharge was generally preceded by a sense of sickness; the matter then ascended into the mouth, and was spit out. She described the action as that

of vomiting; but to a by-stander it had not that character. There was no retching—there was no mucus, nor on any occasion were any of the usual contents of the stomach ever seen. These symptoms were accompanied by pain in the right side of the chest, between the shoulders, and in the right hypochondrium. Pressure on this part, and on the epigastrium, increased the pain, and a decided sense of hardness and fulness was at the same time felt. The woman looked ill, and was much emaciated. She could not lie on the right side; but she positively affirmed that she had no cough, and never had any, during any part of her illness.

Her disorder began about eight months ago, with severe pain in the right side, and a sense of weight in the epigastrium. Two months after the commencement of these pains, while engaged in some hard work, she brought up a considerable quantity of blood, which was soon afterwards followed by the *bloody corruption.* This continued daily for a fortnight; and she has never passed a week since, without its occurrence.

The circumstances connected with this discharge, rendered it somewhat difficult to account for its origin. The woman's own notion that it came through the stomach, was, in some degree, countenanced by the entire absence of cough, by the previous history of the disease, and the comparative freedom of the organs of respiration. The sound on the right side of the chest, it is true, was dull, but the respiratory murmur was tolerably complete.

After she had been a few days in the house, I ascertained, after a very accurate examination, that pressure on the right hypochondrium first occasioned a considerable degree of pain, and next, that sort of sensation which generally preceded the discharge. I immediately repeated the pressure, and continued it more firmly and steadily for a short time; and the result was, the almost immediate discharge of about two ounces of purulent matter from the mouth. It was manifestly forced up by the pressure; and I had an opportunity of verifying this fact on subsequent occasions. It was further ascertained that the alvine evacuations were of a very unnatural appearance; the food being undigested, and the bile manifestly deficient, but at no time was any trace of a purulent discharge detected in the stools.

From a careful review of all these occurrences, I was led to conclude that the abscess existed in the liver; but the *course* of the discharge was still somewhat perplexing. As it never passed *per anum;* as it never was mingled with any of the contents of the stomach; and as the *action* by which it was evacuated was not like that of vomiting, especially when the discharge was effected by pressure, the only conclusion I could come to was, that adhesion had taken place between the liver and the diaphragm, and between the latter and the pleura pulmonalis. Ulceration having subsequently destroyed the intervening portion of the diaphragm, the matter would easily escape into the lungs, and be discharged through the trachea. The absence of cough

certainly militated against this view; I, nevertheless, saw no other method of accounting for the symptoms.

I need not enter minutely into all the subsequent details. At one time, the patient seemed to improve considerably, but this flattering promise did not long continue. Beside the symptoms already enumerated, she began to have greater disturbance about the chest; pain, increased on full inspiration, was felt on both sides; and, on the 15th of December, she was, for the first time, seized with cough, which was followed by a discharge of the purulent matter. From that time to the 7th of January, she continued to cough at intervals, and this was almost always followed by bloody purulent expectoration. Every thing now became alarming: the pulse increased in velocity; the emaciation became more marked; and each successive day announced the fatal progress. Under these circumstances, she resolved to be carried to her own home to end her days. I could not oppose this wish, though it deprived me of the means of confirming or refuting the opinion I had expressed touching the nature of her malady.

ARTICLE III.

On the State of the Circulation in the Lungs, which precedes the formation of Tubercles.

BY JONAS MALDEN, M. D.

Worcester, Dec. 20, 1830.

Dear Hastings,

On reading your paper "upon the curability of consumption," it occurred to me that the view there taken of the probable origin of tubercles in obstructed circulation in the blood-vessels of the lungs, (whether that obstruction depended upon inflammation or congestion, upon acute or chronic disorder,) might be defended by numerous histories of consumption, ancient and modern, and by reference to many well-known physiological laws, and pathological facts; with your permission, therefore, I will endeavour to take such a survey of this field of inquiry, as will, I think, satisfy any unprejudiced mind upon the point. If this view were established beyond doubt, its influence upon practice would be truly beneficial, as it would lead us to *note early* the symptoms of pulmonary congestion, and to remove them before any extravasation had taken place, or any adventitious structure formed. For in this disease, the advice of Celsus, though old, cannot be neglected with impunity. "Si vera phthisis est, *inter initia* protinus occurrere necessarium est; neque enim facilè is morbus, cum inveteraverit, evincitur."*

1st.—*The age*† at which the human subject is most liable to

* Lib. iii. cap. 22.

† Τοισι δε νεηνισκοισιν, αιματος πτυσιες, φθισιες.—Hip. Aph. § 3. xxix.

phthisis, is favourable to an increased afflux of blood to the viscera, being that at which the body is full of blood, and is ceasing to grow in height. "Porrò senes in hoc malum (φθισιν) frequenter non incidunt, sed minimè evadunt. *Juvenes autem usque ad florentem consistentemque ætatem post sanguinis rejectionem in phthisin prolabuntur;* inde sanescunt quidem, sed non facilè."*

Celsus expressly states that it chiefly affects subjects between the eighteenth and thirty-fifth years of their age, "ab anno duodevicesimo ad annum quintum et tricessimum.† Modern observations have confirmed the truth of this opinion. Those are observed to be most liable to consumption, who shoot up very rapidly about the age of puberty, which is commonly called outgrowing their strength, but which, pathologically viewed, establishes a sudden and dangerous disproportion between the pulmonary and systemic circulation; a disproportion felt more acutely by the former, as the developement of the latter is diminished often abruptly at this time. This disproportion is gradually rectified afterwards by a lateral growth of the chest; and it is remarkable that the termination of the period of the greatest liability to phthisis, corresponds with the time of the complete developement of the adult figure. "Corpus non statim *quoquo versum* crescit. Justam et plenam staturam juvenis forsan adipiscitur *decimo octavo* vel *vigesimo* ætatis anno, sed *gracilis* adhuc, et formâ adulto viro dissimilis, et viribus impar. Paulatim verò aliud incrementum, et aliam adipiscitur formam, et *quadratus* fit et torosus, et *thoracem ampliorem*, *humeros latiores*, ossa grandiora, juncturasque artuum validiores habet."‡

2nd.—*The form* of the chest of those most liable to this disease, has been observed to be *straitened*, a form not favourable to the free transmission of blood through the lungs. "Habitus verò in id vitium proni sunt graciles delicatique, scapulas (ομωπλατας) sectilibus tabulis similes, *alarum instar* habentes, prominenti gutture, albidi, *rariori pectore*."§

3rd.—Its most frequent exciting cause, *cold*, particularly if combined with *moisture*, is one which produces fulness of deep-seated vessels, and most remarkably in the most vascular structures. "Τα ψυχρα, οιον χιων, κρυσταλλος, (ice) τω στηθει πολεμια, βηχεων κινητικα, αιμορροικα."‖ "Regiones autem frigidæ atque humidæ hujusce affectûs germanæ sunt."¶

4th.—One of the most frequent of the earliest symptoms of this disease, *spitting of blood*, is one which proves either an increased afflux of blood to the lungs, or an impeded circulation of it

* Aretæus de Phthisi.
† Ibidem.
‡ Conspect. Theor. Med. Greg. cap. 22, sect. 862.
§ Aretæus de Phthisi.
‖ Hip. Aph. Sect. 5, xxiv.
¶ Aretæus de Phthisi.

through them. Hippocrates, as before quoted in a note, mentions αιματος πτυσιες, immediately before φθισιες, amongst the diseases of youth; and has this remarkable aphorism in his prognostics, sect. 7, xv. Επι αιματος πτυσει, πυου πτυσις κακον. The definition of phthisis, at the very commencement of Aretæus's chapter on this disease, includes hæmoptoe as one of the earliest signs. "Si ab externâ causâ *abscessu* in pulmonibus facto, aut a longinquâ tussi, aut a *sanguinis rejectione* et puris, extussiant, πυη et φθισις nominatur." Morton, in his Phthisiologia, enumerates among his "prognostic signs," "a spitting of blood, though it be accidental," and "a straitness and oppression of the breast, with some difficulty and shortness of breath almost always joined therewith." Cullen must have regarded, with the ancients, spitting of blood as an almost invariable precursor of phthisis, as he arranges the latter in his nosology merely as the "sequela" of the former. It is fair, therefore, to infer, that where this *accidental* proof of the augmented vascularity, or præternatural fulness of the blood-vessels of the lungs, does not occur, still that this state of the lungs actually exists in the earliest stages of this disease: particularly as the shortness and tightness of the breath increased by motion, the state of the pulse in the extremities, and of the vessels on the surface of the body, are all so many collateral proofs of such a state. It is true that external proof of hæmorrhage may not take place, but it should be remembered that, for this proof to occur at all, it is necessary either that the blood should proceed from the vessels of the air-passages themselves, or be poured into or communicate with them; and extravasation of blood into the cellular tissue of the lungs, often occurs without communicating with the bronchi, or, at least, without being coughed up. Again, there is a form of rapid consumption occurring to rather plethoric subjects, in which the patients die in the *hæmorrhagic stage*, with great destruction and infarction of the lungs, but without any discoverable traces of tubercles on examination after death. These patients, in all probability, would have had tubercles, had the disease been protracted into a more chronic form. After all I have said, it is needless to remark, that there being proof, in many instances, of the existence of tubercles prior to the occurrence of *visible* hæmorrhage, is no argument against the disposition to hæmorrhage, or even occult hæmorrhage having preceded the formation of tubercles.

I shall conclude this part of my subject, by instituting a comparison between the symptoms of the congestive form of acute pneumonia, and those of the early stages of phthisis, and leave it to you to determine the extent of their parallelism.

It frequently happens that, at the very onset of *inflammation of the lungs*, the pulse is small, irregular, and oppressed, yet very frequent, the patient at the same time complaining of *great weakness* and oppression; yet there are present, a load at the breast, difficulty of breathing, great anxiety and heat felt about

the precordia. This sudden prostration of strength and pulse cannot depend upon real exhaustion, which the duration of the disease for a few hours could not produce. The debility, and all the other symptoms, depend upon the unequal distribution of the blood, the great accumulation of it in the lungs, the impeded function of these organs, and the imperfect supply of blood to the systemic side of the heart. "In such cases, letting of blood is so far from weakening, that it really raises the powers of nature."*

In some very violent cases "where both the lobes of the lungs are greatly inflamed and *obstructed*, an immediate and excessive weakness comes on, with an inexpressible anxiety and oppression of the chest, a very *small, weak, trembling pulse*, coldness of the extremities, clammy coldish sweats, the eyes staring, the face bloated, and almost livid, &c."†

In this extreme and dreadful case, the blood is so accumulated in the lungs, that the aorta and its branches do not receive enough to carry on the common offices of life.

"Dissections have shewn this to be the case. The lungs have been found quite *stuffed* up with concreted blood, red, hard, and, as it were *fleshy*, or rather of the colour and consistence of *liver*, and so heavy, that any part of them cut off, sank in water."‡ Nothing but *immediate* and *large* bleedings can save such a deplorable case as this.

Now, the question I propose is this,—is there any analogy between the insidious symptoms of incipient phthisis and such cases as the foregoing? I think there is, as much as can be expected between acute and chronic disease of the same kind.

Phthisis usually begins with a dry cough, so slight and inconsiderable, that little or no notice is taken of it, till its *continuance* and *gradual increase*, begin to make it regarded. If, at this early period, the respiration be attended to, it will *uniformly* be found to be *quicker* and *shorter* than natural. This often does not attract attention, from the circumstance of this *quick* breathing not being *laborious* when the patient is at rest; but as it readily becomes so upon slight exertion, this latter circumstance is generally noticed much earlier than the former. This state of things is generally attended with, or soon followed by, a quick, hard, and small, *sometimes extremely* small, pulse, constantly above ninety, languour, lassitude, and general weakness; there are occasional, sometimes periodical, burnings of the hands and feet, but, for the most part, the extremities receive a narrow stream of blood, and are easily chilled. *A spitting of blood* has sometimes been the first symptom; this alone would not be a proof of imminent phthisis, but, conjoined with the above enumerated symptoms, it must be cousidered a very unfavourable

* See Huxham on the Peripneumony, pp. 182-3.

† Ditto ibidem.

‡ Huxham as before.

sign. On the whole, *short and quick respiration*, with a *hurried small pulse*, are the two most dangerous symptoms in a suspected phthisis; and persons have died in a state of great emaciation, and their lungs, upon dissection, have been found both tuberculated and hepatized, who, when living, had no other symptoms than these two, conjoined with a hacking dry cough.

Is there not, then, acute and chronic pneumonia? and is not a congested state of the vessels of the lungs common to both? and lastly, in aggravated cases, may not death ensue from this congested state alone, or its consequences, in both forms of the disease?

5th.—*The beneficial effects of small bleedings* (in threatened phthisis, with or without hæmoptysis,) are in favour of the view I have taken of the state of the lungs in this stage of the disease. In Sir John Pringle's "Observations on the Diseases of the Army," there is a chapter on "Coughs and the Phthisis Pulmonalis," containing some plain, straight-forward, practical remarks, which are so much to the present point, that I shall transcribe them verbatim.

"Without entering," he says, "into the general consideration of these disorders, I shall only take notice of such cases as I have found most frequent in the army."

"Coughs and consumptions are properly annexed to the *inflammatory diseases*. For a recent cough, from cold, may be considered as the *lowest degree* of a *peripneumony*, and an old *neglected cough* as the *beginning* of a *consumption*.

"*Obstructions* of the lungs are succeeded by tubercles, which, making the cough worse, at last, tear and ulcerate that organ. In all the bodies, which I dissected, of those who died of the phthisis pulmonalis, I found the lungs full both of tubercles and ulcers. We cannot, therefore, be too careful in removing colds in the beginning." "The disease being of an inflammatory nature, *bleeding* is the chief remedy; which, alone, will often cure bad colds, whilst all other medicines may be ineffectual without it."

"In the older and more stubborn coughs, *or in the first stage of a consumption*, when the patient complains of pains in his side, constriction at the breast, or hot and restless nights, I have trusted most to *small* but *repeated bleedings*, to issues, and to a low and cool diet.

"I have found these *small bleedings* not only beneficial in old coughs, threatening consumptions, but also after hectic symptoms had appeared. The quantity of blood drawn was from *four* to *seven* or *eight* ounces once in eight or ten days; and sometimes a vein was opened after shorter intervals. It was observable that the patients never found themselves so much relieved on the first, as on the second or third night after bleeding. The blood was constantly sizy; but, if it had ever been in a resolved state, to have insisted upon taking away more, would have been altogether improper. Nor would I recommend this method for common practice, without making great allowance for the strength

of soldiers, and *suiting the quantity of blood to be let, to the condition* of weaker patients."

Old Morton, in his Phthisiologia, has the following remarkable passage.* "Although bleeding may do mischief sometimes in a confirmed consumption, yet, in the beginning of one, it is very beneficial: and I do not at all doubt but the *tubercles*, for the most part, *are occasioned by the neglect of it*, or for want of bleeding to a sufficient quantity *in the beginning of the distemper*, whereby the consumption uses to run presently into the second and more fatal degree.

"For so long as the lungs are only *stuffed*, or the *tubercles* that arise from that *stuffing*, remain in a crude state, the person's life, though it be miserable, yet is not brought into any sudden danger, though he is troubled with an oppression of his chest, some difficulty of breathing, and a frequent cough."†

After perusing these quotations from the older English writers on this subject, it is somewhat amusing to meet with a letter in a very recent publication, in which Sir John Pringle's practice of small bleedings, to avert impending phthisis, is proposed as *something new*. The document, however, is of more value on this very account, as there can be little doubt that the writer is convinced of the efficacy of the plan, from his own experience of it. The paper, which is published in the fifth volume of the Dublin Hospital Reports, p. 351, bears the following title: "Small and frequently repeated bleedings in hæmoptysis and and incipient phthisis recommended, in a letter to R. J. Graves, Esq. M. D., Professor of the Institutes of Medicine; from J. Cheyne, Esq. Physician General." He describes the symptoms of incipient phthisis, first, without hæmoptysis; secondly, when this is a prominent symptom; and he states that timely, small bleedings of six ounces, repeated in the former cases, once in four or five days; and in the latter cases, every sixth or seventh day, have sometimes "proved sanative, and saved the patients."

6th.—The well-known circumstance of phthisis often rapidly following upon inflammatory affections of the thoracic viscera, can only be explained by the admission that an increased afflux of blood to the lungs, is favourable, at least, to the acceleration of tubercular mischief, if it be not the immediate cause of it.

Amongst these exciting diseases may be enumerated, catarrh, bronchitis, measles, hooping-cough, pleurisy, pneumonia, pericarditis. Such diseases are said "to make the latent seeds of a pulmonary consumption begin to appear, or to *form this distemper* even in childhood or decrepit age, of which there have been too many examples."—*Heberden's Commentaries, p.* 373.

Lastly.—The generally admitted fact, that the predisposition to scrofulous diseases and to phthisis, prevails in the same families; that they are jointly hereditary; and that, in a majority

* Edit. 1720, p. 128.

† Phthisiologia, p. 119.

of cases, the individuals who fall victims to phthisis, have given previous indications of scrofulous action; lead unavoidably to the institution of a comparison between the morbid processes in both diseases. Now, if upon inquiry it shall be found that, in degenerations (in other parts than the lungs,) admitted to be scrofulous, the process commences by a loaded state of the vessels of the affected part, and that this state is followed by an interstitial deposit of tubercles, then I think it will be fair to infer that the process in the formation of tubercles in the lungs is similar.

I have examined, with great care, the external lymphatic glands, and the mesenteric glands, (two structures which may be considered peculiarly liable to scrofulous disease,) in the various stages of this complaint, and have no hesitation in stating that the following is the course it pursues when it attacks these glands:—

A gradual enlargement takes place; this is sometimes very slow, at other times faster. For some time after the commencement of this enlargement of the gland, it is found, when cut into, to have a preternatural *pinkness*, (there is no other word that will express the peculiar colour); this pinkness, when it is examined with a magnifying glass, is found to be owing to innumerable small blood-vessels. At the same time that you meet with glands which have only this appearance, you will find others, in the same subject, which, upon close inspection, have, conjoined with the pinkness, small scattered white points in them, not larger than the smallest pins' heads. These little points picked out, are found of a cheesy consistence, and are, in all respects, similar to the tubercle of the lungs, in its first stage of softening.

If the disease be farther advanced, then the quantity of this *steatoid* matter is increased; the gland assumes an irregular botryoidal figure; and, when cut into, no longer exhibits the pink appearance before described, but contains small roundish masses of a whitish soft pulp, closely packed together, and divided from each other by delicate membranous bands.

As the disease goes on, these masses soften in the centre, and, gradually coalescing, form, at last, a cavity in the gland, which contains a thin serum, (sometimes of a pink colour,) with which is mixed a soft curdy matter, and sometimes pus.

In the tabes mesenterica, children sometimes die of marasmus, in the first stage of the disease above described, and before the tubercular process has commenced.—Burns, in his chapter on this disease, describing the enlarged glands, expressly states that "These tend slowly to the formation of a cheesy substance, but death may take place before that process be accomplished."—*Burns' Midwifery, p.* 452.

The high vascularity of the ends of the bones, particularly of the cancellar structure, in the "joint evil," is familiar to all acquainted with this subject; and this increased vascularity is sometimes found with, and sometimes without, an interstitial deposit of tubercular matter.

I need not prosecute this part of my subject farther, since I have advanced enough to shew the great similarity, if not identity, of the morbid processes in scrofula, and tubercular "phthisis:" and, notwithstanding all that has been adduced upon the opposite side of the question, I must confess that I think I am borne out by facts, when I state that a preternatural fulness of the blood-vessels of the part, precedes the tubercular degeneration in both instances. Whether this fulness be necessarily an adjunct of inflammation, I leave to others to decide.

One word upon the indication of cure in phthisis. The most rational appears to me to be this. To equalize, by all the means we possess of so doing, the systemic and pulmonic circulations, from the moment we entertain a suspicion of their balance being impaired. These means are,—1st. The subtraction of small quantities of blood from the *venous* system at short intervals, in proportion to the strength and age of the patient, and other circumstances.—2dly. The maintenance, by warm clothing and other means, of a vigorous circulation in the *systemic* capillaries; and in particular, in those of the surface of the body (especially of the chest) and in those of the extremities.—3dly. The preservation of the due nutrition of the body, by maintaining a healthy action of the whole digestive apparatus, and giving, at proper intervals, bland nutritious food.—4thly. The avoiding of all the acknowledged lædentia in the inspired air.—5thly. The substituting, for walking exercise, exercise which does not produce much muscular pressure on the *valvular veins*, as this latter kind of exercise much assists the equalization of the circulation, whereas the former, as long as the lungs are oppressed, increases the mischief, by returning the blood to the right cavities of the heart faster than the lungs can bear it with convenience. Sydenham, who was a plain matter of fact man, would not have praised horse exercise in this disease so highly, if he had not found wonderful good effects from it.*—Lastly. Establishing sufficient drains from the parietes of the chest, by means varied according to the circumstances of the case. The ancients, although bad pathologists, as far as the light of morbid anatomy is concerned, were, on the whole, very fair practitioners; and the freedom with which they used the actual cautery in this disease, is worthy of remark.

"Exulcerandum est ferro candenti, uno loco sub mento, altero in gutture, duobus ad mammam utramque; item sub imis ossibus scapularum, quas ομοπλατας Græci vocant, *sic, ne sanescere ulcera sinamus, nisi tussi finitâ.*"—(Celsus lib. iii. cap. 22.)

I remain, Dear Hastings,

Your's faithfully,

JONAS MALDEN.

* "I solemnly affirm that riding is as effectual a remedy in this disorder, as mercury is in the lues venerea, or the bark in intermittents, &c."—*Swan's Sydenham, p.* 402.

ARTICLE IV.

Observations on some Pathological conditions of the Membrane of the Aqueous Humour.

BY MR. MIDDLEMORE,

Assistant Surgeon to the Birmingham Eye Infirmary.

HAVING frequently witnessed the extreme rapidity with which fluids effused into the chambers of the eye have become absorbed, and occasionally noticed foreign particles connected with the iris, retain their size and attachment to that part, without producing any great degree of irritation, or undergoing any evident change in their figure and magnitude; whilst similar substances, which have been thrust into the chambers of that organ, have been, in other instances, quickly removed by absorption, and occasioned severe irritation, until that process had diminished their bulk or removed them altogether: I beg to relate the following cases, in illustration of these various facts, and afterwards to offer a few observations which they have suggested.

CASE 1.—William Pardoe, æt. 29, a strong muscular man, in the employ of the Birmingham Water Works Company, received a severe blow upon the right eye, from a piece of metal which had been forcibly detached from one of the iron pipes; he was immediately brought to my house, by a gentleman who was standing by at the time of the accident. The poor fellow complained of severe pain of the eye and head, and said that he had totally lost his sight on that side; on examining the eye, I discovered a slight degree of enlargement of some of the conjunctival vessels, but the cornea was not divided, nor could I discover any aperture through which a foreign substance could have penetrated into the globe; this fact, combined with the man's assurance that he thought the piece of metal was of large size, induced me to believe that such had not been the case; the anterior chamber was full of blood, so that the iris could not be distinguished. Under the belief that the force with which the foreign body had struck the cornea, had ruptured the iris, without coming into actual contact with its surface, and thus occasioned the laceration of some of its numerous blood-vessels, and the consequent effusion of their contents, I directed him to be immediately bled to syncope, and to take, every two hours, two grains of calomel, with the sixth of a grain of opium; ordering, at the same time, the injured organ to be frequently bathed with the liquor plumbi acetatis dilutus. This patient first called upon me at eleven o'clock one morning, the moment the accident took place; and on the following day, about the same hour, when I again saw him, the chambers of the eye were quite free from any appearance of sanguineous effusion, the iris perfectly bright, and the pupil circular, except at a small point towards the external

canthus, where it was evident a trifling extent of laceration of that membrane had occurred. In the course of a short time, the eye was as strong as usual, although the iris never perfectly regained its circular form.

Case II.—Wm. Dixon, æt. 39, an iron-founder, in the employ of Mr. Jones, of a full phlethoric habit, has an attack of iritis of the left eye, occasioned, as he believes, by a blow; on examining the inflamed organ, with a view to ascertain the nature and extent of the inflammation, I was surprised to find a small black spot at the lower part of the iris; on questioning him respecting it, he stated that about eleven years ago, he received a penetrating wound of the cornea from a bit of steel, which at first produced a severe degree of inflammation, but which eventually subsided, leaving the eye nearly as perfect as it was prior to the occurrence of the accident, except that it was subject to occasional attacks of inflammation, but never, until the present time, of so severe a nature as to oblige him to apply for medical relief; he thinks it is more liable to inflammation from a slight cause, than its fellow, for in many instances where they have been equally exposed to an injurious agent, it alone, has become inflamed. On making a more minute and attentive examination of the eye, in which this black speck was observed, I discovered that it was lying upon, and attached to, the iris, which retained its brilliancy and colour, as well as its power of action; but at that part where the foreign body was situated, its pupillary border was nearly horizontal, giving the pupil a shape of this description ⌓; the substance itself appeared to be nearly of a square form, and to be covered by a thin pellucid membrane, derived most probably from the iris, either as an adventitious formation, the product of inflammation, or an enlarged production of the membrane, which covers the iris in its natural state, and assists in the secretion of the aqueous humour, as well as imparts to the motions of that structure, steadiness and equality. In some situations, this cyst was distinctly visible, but throughout the greater part of its extent, such was its tenacity and transparency, that its existence could only be inferred.

The following case I merely mention to contrast it with the preceding, and as it is in many respects similar to those in which a portion of a cataract needle has been broken in the eye, in the operation of keratonyxis, I shall very briefly present to your readers only its more prominent circumstances.

Case III.—A poor man, from Rowley, received a blow upon the eye with a sharp piece of metal, which pierced the cornea, and fell to the bottom of the anterior chamber; in a short time the customary effects of so severe an accident occurred, which were promptly met by the ordinary anti-phlogistic remedies. In a few days, the aqueous humour was very slightly tinged of a reddish colour, but eventually, by the aid of calomel and opium, to the production of a full mercurial effect, the red colour disappeared, with the metal which produced it. The existence

of inflammation of so severe a nature, and so long a duration, occasioned slight impairment of vision, but in other respects there remained no trace of the injury his eye had sustained.

Perhaps I ought not to have said the reddish tinge of the aqueous humour, was produced by the solution of the metal, for I have many times witnessed a similar appearance, in consequence of severe and even chronic inflammation of the iris, or of the membrane of the aqueous humour; and have also known it follow a blow upon the eye, without any puncture or rupture of its tunics having occurred; and, on the contrary, have not generally noticed its existence in the various cases I have seen, in which a metallic body has been resident in the chambers of the eye.

It will be understood that I am not confounding the discolouration of which I have just spoken, with the effusion of blood between the lamellæ of the cornea, nor with that tinge of the aqueous humour which sometimes accompanies the dense crescent-shaped coagulum, occasionally noticed in iris, and which, in some rare instances, follows accidental violence inflicted upon the eye, and would appear to be an effusion of blood somewhat modified in its characters; from those vessels which, from causes of a similar description, more commonly deposit lymph or pus. This crescent-shaped deposition is generally of a densely red colour, occasionally, even of a purple hue at its lower part, whilst its upper or concave edge is of a bright red or scarlet tinge: its superior border is generally very concave; the deposition extends for a considerable distance, along the edge of the cornea within the anterior chamber, and is seldom very broad. There is never, as far as my observation extends, that plane line at its upper border, noticed in hypopion, which gives to that effusion an outline expressed by the term plano-convex, its upper border being the plane, and the lower, or that nearest the junction of the cornea, with the sclerotica, its convex margin. Such cases are difficult of cure and obstinate in duration; are often attended with severe hemicrania, and very commonly terminate in ulceration or sloughing of the cornea.

From the relation of these cases it will appear, first, that the absorbing power of the chambers of the eye is occasionally extremely great, and may generally be much increased. Secondly, that not only is the rapidity of absorption very considerable, but its force surprisingly great, inasmnch as, by its agency, substances of the least soluble nature, and most dense texture, may be removed; and thirdly, that the iris has the power of adapting itself to the presence of a foreign substance, and under some circumstances, of furnishing a cyst, in which such bodies may be placed beyond the agency of absorption, and the power of exciting irritation.

I am not aware that any medicines applied to the eye itself, possess a power of augmenting the action of the absorbing surface of its chambers, although it must be admitted that it is stimulated to increased activity by the presence of a foreign

body, which, as is generally the case, excites a certain amount of irritation: for example, the activity of the absorbing surface of the chambers of the eye, is more considerable during the removal of a lens, which has either been accidentally displaced or purposely broken, as in the operation of solution; for it is not probable that the ordinary state of the power of absorption proceeds with a rapidity and force such as is then witnessed; although we must admit that the necessity which exists for the preservation of perfect transparency in this situation, renders it probable that, under ordinary circumstances, the activity of absorption is here much greater than in other structures, where the transparency of the secreted fluids is of less importance than their property of facilitating the movement of parts upon each other.

The absorption of blood effused into the chambers of the eye, under circumstances similar to those now mentioned, would proceed with more rapidity than the absorption of a dislocated lens, either in its entire or broken state, for, the violence productive of the displacement, or, if it be done intentionally, the manipulations necessary to dislodge and divide it, would destroy the membrane covering the anterior capsule, and thus greatly diminish the extent of absorbing surface. There is, too, reason to believe that absorption does proceed with equal energy in each of the chambers of the eye; when, therefore, in performing the posterior operation of solution, we are told to place as many fragments of the lens as possible in the anterior chamber; it is, first, because that apartment is larger than the posterior; secondly, because the aqueous humour can act upon a more extensive surface of the comminuted lens, in that situation; and lastly, because the whole of its absorbing surface remains entire and uninjured. If a foreign body were propelled into the posterior chamber, without injuring the serous membrance covering the anterior capsule, I can imagine that it would be absorbed quite as fast, relatively to the size of that apartment, as in the anterior chamber, except that in consequence of the more ample dimensions of the latter, the aqueous humour could advantageously act upon a more extensive surface of its paries.

The equality with which the functions of secretion and absorption are conducted, in a part where a deviation from accuracy, in this respect, would be attended with the most injurious consequences to vision, is a subject of justifiable admiration; and it is almost impossible to allude to this circumstance without glancing at the cause of so uniformly balanced an action of these important functions. There is, perhaps, scarcely any part of the body in which dropsy less frequently occurs, than in the eye, and it would appear to be prevented by the equable pressure the contents of the globe sustain from their firm enveloping membranes. When speaking of hydrophthalmia, many very eminent writers rest content with saying, that it is a disease consisting of an enlargement of the globe of the eye, from an increase of its

fluid contents; and this explanation is correct as far as it goes, but it is by no means sufficiently comprehensive, nor satisfactory to those, who are desirous of enlarging their knowledge, beyond an acquaintance with effects. I think it will be generally found that, in this disease, the external tunics have previously undergone some alteration, and have suffered that degree of attenuation which prevents them from offering that resistance to the increase of their contents, which is a requisite counterpoise to the secreting function. In proof of the accuracy of this position it may be mentioned, that whenever the outer coverings of the eye become weakened or divided, staphyloma or hydropthalmia very commonly arises, whilst, when serous accumulations take place in the serous cavities of the body generally, the eye retains its natural volume, and so long as the integrity of its outer tunics remains, does not admit of those dropsical effusions which exist in other situations. If the moderate and equable pressure exerted upon the contents of the globe of the eye throughout their whole extent, were not one means of assisting and regulating its absorbent function, why should accumulation take place when that pressure becomes partially removed? If the pressure of the tunics of the eye, does not act as a stimulator and regulator of the function of absorption, what prevents that organ from being affected with hydropthalmia, when nearly every other cavity of the body becomes filled with serous effusion, owing to an attenuated and impoverished state of the vital fluid, cases in which, as Andral remarks, the blood resembles a reddish watery fluid? This is a case that would operate generally, and there appears to be no sufficient reason, why the eye should not suffer in such instances, if it be not admitted that an increase of its contents is prevented by the pressure and support of its tunics—a provision against serous or other fluid accumulations, which other parts do not enjoy to an equal extent.

Such is my opinion of the general cause of hydropthalmia, and of the reason, why the contents of the eye-ball are so little subject to variation, in quantity. I shall not, however, enter further upon this subject at the present time, as I am engaged in arranging the materials for a more extended series of observations, which I hope to make the subject of a separate communication.

The other circumstances determining an increased activity of absorption in the chambers of the eye, are, placing the system under the influence of mercury, and constitutional conditions, whether they be natural or produced artificially—the subject of the first case (to which I now return) was 29 years old, of a thin, though muscular habit of body, the absorbing powers of his system generally were increased by the prompt exhibition of mercury immediately after the free detraction of blood; locally, by the irritation and excitement produced by a foreign body, for such the effused blood must be considered; thus there existed in his case, a combination of events, natural and artifi-

cial, favourable to local and general absorption, and to that circumstance must be attributed his perfect and speedy recovery.

I have stated that not only does absorption take place most rapidly from the serous membrane lining the chambers of the eye, but that it also has a power of absorbing substances of a dense texture, and which are insoluble in ordinary menstrua —such, for instance, as fragments of metal and stone—now, as it is not presumable that the absorbents detach entire and solid particles of these substances, and thus occasion their removal, it may be right to inquire how far the aqueous humour exerts a solvent power, or exercises a chemical influence upon them prior to their absorption, for that such a power is exercised there can be little doubt. Without, however, entering further upon this subject on the present occasion, I shall assume from physiological reasoning, combined with the observation of facts, that a change of a very limited extent takes place in the surface of a foreign body, about to be removed, just prior to its removal, and that in this softened and changed state the absorbents convey it away.

There are persons who imagine that the attraction of aggregation of the particles of a mass so circumstanced, is diminished, and that thus the power of the absorbents is sufficient to detach the most minute particles nearest to them, and to propel them onwards; but surely it is more reasonable to assert, that a power which could diminish or destroy the attraction of cohesion existing among the particles of a dense mass, could much more easily effect those changes upon its surface, where the various powers of the system must be presumed to exert their chiefest influence, by which it is converted into a comparativcly soft substance, and thus most readily removed in the same manner, as we know many of the animal secretions are taken away. I have not heard the nature of that process by which the attraction of cohesion existing throughout an entire mass is lessened or destroyed, as a preliminary step to absorption, as some have asserted, explained; nor can I discover in the organization of the absorbents, any structure, which would justify me in stating, that they possess a force sufficient to detach the solid atoms of a dense mass, and urge them along their delicate tubes.

It has been said that the iris has a wonderful power of adapting itself to altered circumstances—a displaced lens or the hard fragment of one, may occasion great inflammation of the iris, when it is first in contact with that delicate part, but this irritation soon subsides, and it endures the presence of the intruding substance, without evidenciug much uneasiness, or producing much pain—on this account, foreign substances may remain in contact with the iris, until it acquires a protecting envelope, without occasioning any material injury.

It remains for me to explain those circumstances which determine either the removal or stay of foreign bodies of a firm texture, which, after penetrating the cornea, are thrust into the

anterior chamber. If a sharp angular body be propelled into the anterior chamber without lacerating or transfixing the iris, it will most probably occasion an intense degree of inflammation, and become eventually conveyed away by the absorbents,* particularly if the constitutional condition of the patient be favourable to that process, and the remedies for the subduction of inflammation, and the promotion of absorption be employed; but if, on the contrary, the alien body be not very sharp, small, and angular, if the patient be one in whom absorption is not likely to proceed with energy, and if the remedies favourable to the promotion of absorption have not been employed; or, if the foreign substance be, from its situation, or other causes, in close contact with the iris; or if, moreover, it has torn or otherwise injured that membrane, it will very probably remain, and obtain a protecting envelope, the exterior of which will, in the majority of instances, ultimately possess a secreting surface, to the same extent as other parts of the surrounding covering of the iris; this property may be slowly acquired; or, as I have had reason to believe, in other instances, it may exist from its first formation; or what is more rare, it may never be acquired, and in such instances, if the cyst be large, it will obviously render necessary an increased activity on the part of that surface which secretes the aqueous humour.

In three instances, in which I have particularly observed this occurrence, the covering membrane has not however possessed the same characters, for in one case, it was of a thin pellucid texture in nearly every part of its surface, so that the metal it surrounded did not appear to be covered, except in one or two points where there was an appearance of lymphatic disposition, or, an opake spot which much resembled deposition of that description—in another, the cyst was so thick and opake that the metal it enveloped, could with difficulty be distinguished; its appearance was indeed in many respects similar to the fungous growth from the ciliary ligament, mentioned in a former paper —in the third case, I have nothing but the man's authority for asserting that a foreign body was concealed in what appeared to be a mass of imperfectly organized lymph—indeed, the particle must be very small, and the cyst extremely thick and opake, for there is no outward appearance of the piece of coal which he assures me was forcibly propelled into the eye, and was seen to be there some weeks after the accident, until, indeed, it became gradually obscured by the tunic or deposition which now incloses and conceals it. Other cases of a similar description I have seen, but as they occurred before my attention was particularly drawn to the subject, I do not retain a sufficiently accurate remembrance of their characters and history to connect them with my present observations.

* It may be discharged by ulceration of the cornea, or it may occasion suppuration of the eye-balls, or other ill effects.

Although it may be imagined that a foreign body, situated in the chambers of the eye, may receive a covering, variable in its nature, and differing in its external characters, I am inclined to think they are generally such as have been now described. The usual product of acute inflammation of a serous membrane disposed around a foreign body may be variable in thickness here, as in other situations, and would give rise, according to its degree of tenuity, to widely different appearances; or having been originally thick and opake, it may become attenuated by absorption, eventually acquiring a thin pellucid texture, and externally a secreting surface; or it may at once receive a covering similar to that upon the iris, to which it was attached, as tumours and other new formations commonly partake of the anatomical characters of those parts in which they may be situated, and from which they are often supposed to arise, or to be connected; an altered condition of the patient, either constitutional or local, may cause their absorption, and expose the alien body after it has been for a long period covered; or, accidental inflammation may give rise to deposition upon the surface of the cyst, giving it a patched or mottled appearance; these and many other circumstances which might be mentioned, will cause an infinite variety of appearances in these supplementary tunics, dissimilar not only in their origin, but in the various stages of their existence.

As I have never seen any of these new formations unconnected with the iris, it is presumed that they derive their origin and support from that membrane, and that they will, in consequence, be influenced by its diseases. I have no doubt that, from the circumstance of their deriving their nutrient vessels from the iris, they may partake of its inflammation, although it is not improbable that each part might be affected separately as in other situations; the mere fact of contiguity would render each part liable to participate in its neighbour's infirmities; how far the same remedies would be equally applicable under their various conditions of disease, I have had no means of determining.

It may be supposed that the secretion from the surface of these cysts may sometimes differ from that of the membrane of the aqueous humour, and that disease may give rise to an altered condition of its secretion; and it is by no means improbable that in the case of the man from Rowley, which has been previously related, this circumstance may have occasioned wholly or in part, the want of transparency, and defect of vision, of which he now complains.

In further illustration of this subject, I may mention, that many persons have called upon me under the following circumstances—they have received a blow upon the cornea from a particle of metal, which has completely transfixed that part, and the attempts of their fellow-workmen to remove it, have either failed to dislodge it, or have pushed it into the anterior chamber,

and as such particles are usually very small, they become quickly absorbed; or, a person has called upon me with a similar substance, so firmly impacted in the cornea, or, it may have penetrated so deeply through its layers, that I have preferred to allow it, either to ulcerate outwards or inwards, rather than incur the risk of assisting it into the anterior chamber myself; and in all those cases in which it has passed inwards, it has been rapidly absorbed, without leading to any very injurious consequences; indeed, if a contrary plan of treatment had been adopted, I feel persuaded, that in many of these instances, the iris would have become adherent to the cornea, and a closed pupil would very probably have been eventually produced. By removing particles so deeply seated and firmly impacted in the cornea, there is a hazard of discharging the aqueous humour, and of producing prolapse, or adhesion of the iris to the margin of the aperture through which it was evacuated; by omitting to remove them, they become detached by a natural process, and, if thrown off externally, the internal opening is gradually filled up previously to their detachment by new matter, deposited in consequence of inflammation; and, if discharged internally, the opening without, has also become excluded by inflammatory deposition; and the foreign particle undergoes absorption in the anterior chamber into which it has fallen.

The main object of these remarks is to exhibit the wonderful ingenuity of nature, in preserving so delicate a part as the organ of vision, from the effects of the most severe injuries, and to point out the very great power and activity of absorption, and the mode in which it may be increased; and the practical inference I would deduce from them, is, that whenever an incisted particle materially interferes with vision, or appears to render the eye susceptible of inflammation, from causes inadequate to its production, in its natural and healthy state; or gives rise to a vitiated secretion, and thus destroys the transparency of the aqueous humour, a section of the cornea agreeably to the size of the foreign body to be removed, should be made, the cyst containing it opened, and the substance withdrawn, by a pair of fine forceps, or other appropriate instruments; if a portion of the cyst can be conveniently removed at the same time, it would be right to take it away, otherwise it may remain, until gradually conveyed away by the process of absorption. Of course, I am only recommending this operation to be performed for the removal of the evils now stated, or others of equal importance, and only advising its importance when the part has become tranquil, and all active irritation has subsided.

Inflammation of the Membrane of the Aqueous Humor.

Inflammation of the membrane of the aqueous humour, in whatever part of its surface it may occur, whether upon its corneal, its irital or its capsular portion, leads to the same products; this product may consist in the increase of its natural

secretion, the effusion of pus, or the deposition of lymph either into its texture, upon its surface, or within the membranes of the eye. The first state, that, in which deposition takes place into its texture, is generally combined with one or other of the kinds of effusion to which I have just adverted, and will be indicated, in addition to the symptoms peculiar to increase of its natural secretion, or lymphatic effusion, with whichever it may be conjoined, by a haziness and dullness of the part affected. If it exist in its corneal portion, there will be a dull appearance of that part, of the membrane nearest the cornea, occupying its entire extent; if, of the irital portion, the symptoms of iritis, with some modifications, will be present; and if, of its capsular portion, there will be the dull appearance of that part, limited however in its extent to the size of the pupil; it is not of course so extensive as when the corneal portion is affected; in the latter case, the dullness and haziness occupies the whole extent of the cornea, and in the former instance, it is limited to the magnitude of the pupil, the extent of dullness varying with the size of the pupillary aperture. The inflammation may, however, occupy its whole surface, and in such case, there will be a general haziness of every part with which it is connected, a tardiness of action, though not a positively immoveable state, of the iris, a diminution of its brilliancy, and a contracted, but not a very contracted, state of the pupil. The second state I am desirous of mentioning, is that, in which an increase of its natural secretion is presumed to take place in addition to the effusion of pus or lymph. It is not my intention to make any particular allusion to that increased activity of its secreting vessels, which, here, as in other situations, must frequently occur, because, as I have stated, there exists in this situation a special provision against an accumulation of the fluid contents of the globe; for, it is only when the inflammation is of the most active and acute kind that such an increase occurs, at least in the healthy state of the external tunics. The aqueous humour may be altered in its qūalities and increased in quantity by inflammation of its secreting membrane, and as we have mentioned, this inflammation may be either general or partial; suppose it to be general, and to have led to these effects;—that is, increase of its natural secretion, with the effusion of pus,—there will be present, an imperfect arrangement of pink vessels around the cornea, a general increased lachrymental secretion, some intolerance of light, haziness, the affection of the iris, a sense of pain, and tension of the eye-ball, with an appearance of preternatural fullness of the globe, and prominence of the cornea, and frequently hemicrania; there will also be present, hypopion, the pus will be deposited according to the laws of gravity in a particular form, at the bottom of the anterior chamber; but, if the secretion be mixed with minute portions of lymph, it will be extremely turbid, and fragments of this deposition may be noticed by the aid of a magnifier, floating in the aqueous fluid, during any sudden

movement of the eye or head; but it more generally happens that in this acute stage of the disease, the lymph is deposited upon its surface, where it is connected with well-organized structures; on this account it is rarely, if ever, seen upon that portion which lines the neural surface of the cornea, whilst, on the contrary, it is not unfrequently noticed upon that part of it which covers the iris, and the anterior capsule; it would seem as though the unaided excitement of its own structure were inadequate to the production of much lymphatic deposition.

If the increase of its natural secretion do not depend on continued excitement; if the cause predisposing to this increase be not permitted to remain in operation, it will be removed without occasioning much inconvenience; for, the natural pressure, the firm and equable support of the surrounding tunics, will, in consequence of the increase of the fluids they envelope, become augmented, and thus excite, in an equivalent and corresponding degree, the absorbent function; but, if the cause of excitement continue, or, if the inflammation itself be severe, the sense of tension may occasion extreme torment, and render the operation of tapping advisable; by this means, we may very probably gain time to diminish or remove the cause of the mischief, and prevent the re-accumulation of an injuriously distending amount of fluid.

Lymph may be deposited upon the iris, or upon the anterior capsule, as a consequence of inflammation of that portion of the membrane of the aqueous humour which covers those parts; if it be deposited upon the iris, it is generally of a globular form, and is almost always absorbed as soon as the inflammation which produced it has subsided; it may, however, remain, and become organized, if no sufficient measures be taken for its removal; but even then, it is not beyond the reach of treatment, but may be made to disappear, either partially or totally, by the employment of proper remedies. It is, however, more apt to remain, when deposited as a thin layer upon that portion of the membrane covering the anterior capsule, producing a mottled appearance, which we shall presently more particularly notice; in fact, the deposition then takes place upon a serous surface, the vascularity of which is much increased, and also supported in its state of excitement, by a corresponding augmentation of action in the vessels of the capsule behind; and, before it can be wholly absorbed, a portion of it becomes organized, the two processes, that is, the process of organization and absorption are going on at the same time, and the new deposition cannot, therefore, be entirely removed by absorption, before some part of it is organized, which organized portion is necessarily that which is in immediate contact with its parent surface; it is this portion of organized deposition, which so frequently remains after inflammation of this portion of the membrane of the aqueous humour, which constitutes one very common species of spurious or lymph cataract. If this deposition be not produced by general

inflammation of the anterior capsule, the pupil will assume a patched, mottled, or reticulated appearance, in addition to the general cloudiness with which these more considerable opacities are blended; it will not acquire that equally and densely opake aspect, noticed after acute general inflammation of the capsule itself.

There is one other circumstance which it may be right to notice in connexion with this subject; if lymph be effused into the anterior chamber, as in some forms of hypopion, or upon the iris, as a globular mass, the absorbing surfaces of the chambers remain uninjured, or nearly so, but if it take place upon the anterior capsule, the absorbing surface of that part receives a coating which destroys its absorbing power, and thus diminishes the vigour and the power of that process in the chambers generally; presuming, therefore, that the same amount of lymphatic deposition took place upon the secreting membrane covering the anterior capsule, as within the anterior chamber, it would be much less likely to be absorbed in the former, than in the latter situation, in consequence of the destruction of the absorbing surface with which it was in contact.

The simultaneous, though not equal progress, of the process of organization and absorption, is here, as in other situations, regulated by laws peculiar to the animal machine; if solid deposition take place in any of the cavities of the body as a product of inflammation, and remain in close approximation with the surface which produced it, there is an effort made by the absorbents to remove it on the one hand, and by the nutrient vessels of the part to organize it on the other, to prevent that irritation which would be likely to result from the contact of dead with living parts; but, not only is the process of absorption more rapid than that of organization, but its activity and intensity is equal to the removal of new structures, until their organization becomes perfect and complete, and their active vitality fully established. In this way, the absorption of lymphatic deposition takes place in the eye, as in other parts, particularly if its action be quickened, and its power increased by those remedies which have a stimulating influence upon this important function; a fact which it is of the highest importance to bear in mind in the treatment of the consequences of inflammation of this description, inasmuch as it points out the necessity of following up the requisite treatment without the slightest delay, before these adventitious parts acquire an established vitality—a full and complete organization. Sometimes, indeed, these depositions slough, from their imperfect state of organization, or from diminished vigour of the constitution, and other causes, and give rise to a secondary state of disease; if it take place on a large scale in an important situation, a condition of irritative fever will be thereby induced, which may not only endanger, but even destroy life. I have examined the bodies of three persons who died from irritative fever, supervening upon an en-

feebled state of constitution (which condition of debility occurred from circumstances it is not necessary to mention), during convalescence from acute peritonitis, and in each case, there existed a sloughy substance upon those parts of the abdominal and intestinal peritoneum, which had suffered most severely from the recent attack of inflammation, which, when removed, left the serous surface itself in a moderately healthy state; and the inference I drew from reflecting on these cases was such as I have just mentioned, namely, that the deposition produced by the inflammation had become organized, but in consequence of the sudden supervention of a cause much lowering the powers of the system, had sloughed from deficient circulation, and given rise to the irritative fever, (as any other putrid animal matter would have done), which was the immediate cause of dissolution. If the action of mercury assist the absorbent function, and enable it to remove simple inorganic dispositions, as well as those, recently and imperfectly organized, it has no effect beyond this; it does not continue to excite the action of the absorbents, in an especial manner, in the site of the disease, for the removal of which it was originally employed, even if its administration be continued after the morbid product has disappeared; its action then, is as general, as before, it was local—that is, it acts in exciting the absorbent function equally on every part of the system, as far as is customary, whereas, whilst the product of inflammation continued, it caused its removal, in addition to the ordinary amount of absorption from the natural and healthy structures, in, and around which, the adventitious mass existed, as well as in every other situation in which it had been accustomed to operate. The action of special absorption would appear to cease under such circumstances from the absence of the deposition, which, during its existence, may be presumed to act as a local irritant and stimulant.

The iris is liable to fungous growths; to tumours, which are clearly traced to the organization of lymphatic deposition, lymph which has been permitted to become organized by the omission of treatment, with a view of preventing its organization, and inducing its absorption; and to the production of cysts around foreign particles, all of which may be generally distinguished from each other, as well as from growths from the ciliary ligament, an example of which was briefly noticed in my last report.

Inflammation of the serous covering of the iris, constitutes, of course, iritis; but it is right to make a distinction between it and ordinary iritis, by which I mean that inflammatory affection of the iris, which involves its whole textures, (more especially its proper and its cellular structure, which are first affected, rather than its serous covering,) and is attended by those acute symptoms with which every surgeon is familiar, and which, also, is a disease generally limited to its own texture, rapid in its course, and, if unarrested by treatment, destructive to accurate vision. Inflammation of the serous covering of the iris, is characterized by

the following circumstances:—the symptoms are less acute than those of common iritis; it is frequently a chronic form of disease, and may last for weeks without leaving behind any serious organic lesion; there is only a very slight and indistinct arrangement of pink vessels around the circumference of the cornea, and neither the action, nor colour of the iris, is much affected; there is also a very turbid state of the aqueous humour, and generally a dullness of every part with which its membrane is connected, some intolerance of light, and considerable increase of the lachrymal secretion; and in nearly every instance, a sense of tension, and fullness of the eye-ball, with an unusually prominent appearance of the cornea. Of course, it may, by extension, implicate the whole structure of the iris, and thus excite an attack of iritis, which is only to be distinguished from one of ordinary occurrence by its mode of origin—the state of the eye previously to its supervention. Such are the most prominent characters of inflammation of the various portions of the membrane of the aqueous humour, when fully established, before it has proceeded to the production of those changes, which I have designated its modes of termination.

Mode of Termination.—Simple uncomplicated inflammation of the membrane of the aqueous humour may terminate in resolution; in the increase of its natural secretion; in the deposition of lymph; in adhesion; or, what is extremely rare, the effusion of pus; indeed, it seems doubtful how far this latter occurrence ever takes place, when the inflammation is restricted to its surface; but of course, if it extend to the cellular or proper structure of the iris, or the tissue connecting together the lamellæ of the cornea, purulent effusions will very probably occur. In short, the pathological conditions of this part, are extremely similar, if not absolutely identical with those of serous membranes in general. With regard to the deposition of lymph—it may take place upon its surface, as may be sometimes noticed either upon the iris as a thin layer, or small globular mass, or upon its pupillary border, giving it a fringed appearance, and sometimes connecting its opposite side, by the formation of lymphatic threads, or it may be mixed with the aqueous humour, as I have previously remarked; or it may be deposited within its texture, producing a dullness of the part in which this deposition occurs, but never leading to that definite and dense kind of opacity which follows primitive inflammation or ulceration of the cornea; it is a diffused cloudiness, rather than a distinct and definite leucoma.

However, the cloudiness is not absolutely equally and uniformly diffused, for, in the inflammation both of this and its capsular portion, there is a greater degree of opacity in some situations than in others; the part is spotted and mottled, in consequence of the extension of the inflammatory action to the contiguous structures in the site of these secondary opacities; for it will be remarked that they always supervene upon the diffused cloudi-

ness of the surface, upon, or rather near to, which they are situated; but even then they are widely different from the appearance these parts assume when primitively inflamed; for, if they occur in the deep-seated lamellæ of the cornea, or rather, within that texture, intermediate between its posterior lamina, and the corneal surface of the membrane of the aqueous humour, they are less dense, less extensive, more deeply situated, more nearly circular, and more numerous, than opacity of that structure from primitive disease, independently of the absence of all those symptoms, and that history, which characterize primitive corneitis; and if, upon the capsule, there is wanting that streaked glistening silvery appearance, which is so strongly indicative of capsular cataract, and that thick dense deposition succeeded by opacity of the crystalline lens, which always attends acute primitive inflammation of the anterior capsule.

It will be remarked, that synechia posterior, is no infrequent consequence of inflammation of the membrane of the aqueous humour; the two inflamed serous surfaces are so extremely proximate, that a slight amount of lymphatic deposition will be very likely to receive a high, and consequently, a permanent, state of organization; whilst, on the contrary, the opposite condition, synechia anterior, as a consequence of simple uncomplicated inflammation of the neural and anterior irital portions of the membrane of the aqueous humour, never occurs, as far as I am aware, owing to the distance at which the iris is situated from the opposing serous surface of the cornea, unless the iris be pushed forwards to an unnatural degree, previously to the attack, (as may be seen in the eyes of some individuals,) by which it acquires a convex form anteriorly; or, unless the anterior chamber be unusually small, from the too superficial situation of the iris.

The constitutional symptoms are extremely variable, but generally very slight, unless the fulless and tension of the eyeball be considerable; there is, then, much febrile irritation, hemicrania, or darting pain at the sinciput and occiput; in other cases, the digestive organs are somewhat impaired and disordered, and it is not infrequently combined with a strumous or chachectic state of constitution.

Treatment.—The treatment of inflammation of the membrane of the aqueous humour, and the management of its products, may be included under the following heads; namely, the subduction of inflammation, and the prevention, or, if that cannot be accomplished, the removal of its effects. If the inflammation be recent, venæsection regulated by those circumstances which guide us in other cases, will be a proper preliminary measure, and this general bleeding may be followed up, if necessary, by the application of a few leeches beneath the lower lid; calomel and opium given to the production of a full mercurial effect will also be proper, and the eyes (if both be affected), may be kept cool by the use of goulard water, or some similar application; at

the same time it will be right to institute some mode of counter-irritation in the neighbourhood of the disease, say either upon the eye-brow or the temple; and of course, it would be advisable to combine with such treatment a moderated diet—to prohibit animal food and strong liquors. If the sense of tension occasion extreme pain, it will be advisable to tap the eye, by introducing a fine grooved needle through the cornea, near but not close to its junction with the sclerotica; a situation which is neither exposed to the disadvantage of inflicting injury upon the iris, nor of inducing an opacity of the cornea, in a situation where it might present an important obstacle to vision. This measure will be necessary, not as a curative means, but with a view of relieving and preventing that mischief to the more delicate parts of the eye and the cornea, which its continuance might produce.

The instrument with which this operation is performed, need not be larger than an ordinary cataract needle, and the groove should terminate at a little distance from its point; if such an instrument be introduced as in the operation of keratonyxis, the aqueous humour will be readily evacuated, without incurring the risk of inflicting that injury upon the cornea, which sometimes occurs when the operation is performed in the usual way—that is, by puncturing the cornea with a cataract knife, as for extraction, and on completing the puncturing of that tunic at its temporal side, turning the instrument upon its axis; in this way, the cornea is nipped to a certain extent, and irregularly divided at the lower part of the incision. I think it would be far better to press the flat side of the cataract knife, gently against the sclerotic portion of the divided cornea, as soon as the puncturing be completed, (if it be preferred to use that instrument instead of the grooved needle), rather than to place its cutting edge, by a rotatory movement, in contact with the incised parts, by which either they must be nipped, or the section needlessly prolonged.

This plan of treatment, varied as to its extent and duration, comprehends every measure, which, as far as my own observation extends, has been yet ascertained to be useful in cases of this description; but it will often be necessary to continue the mercurial influence, to a moderate degree for a long period, in order to produce the absorption of inflammatory depositions; and let me again remark, that they will, in many instances, be totally removed by persevering in the use of this remedy, even after the idea of removing them, has been relinquished by those who have not the most implicit faith in the agency of mercury, administered with this object, nor an adequate idea of the absorbing power of the chambers of the eye. The organization of inflammatory deposition is not completed for a long period, and if the absorbent power be rendered more powerful and active, whilst the organizing process is suspended or depressed, deposition of a dense texture, and some duration, may be frequently

removed by its agency—the agency of absorption increased by venœsection and mercury, remedies which, at the same time, arrest the organizing process, by lowering the powers of the system generally. If a chronic state of inflammation of the membrane of the aqueous humor has been permitted to continue, it will often be removed, by remedies directed to the improvement of the general health—such a patient may be desired to take five grains of the hydrargyrus cum creta every morning, to submit to a regulated diet, and to take daily, if the weather will permit, a moderate share of exercise in the open air, and, what is of some importance, to have a small issue or seton in the neighbourhood of the disease—the temple, if it be not objected to, will be the most desirable situation, either for the one, or the other; of course, one or two issues or setons will be necessary, as one on both organs may be affected.

In some few instances, the sulphate of quinine has appeared to be of great service, and I have in my possession the notes of two well-marked cases of chronic inflammation of the membrane of the aqueous humor, occurring in children of a chachectic habit, which were perfectly cured by the administration of quinine, after the ordinary remedies for its removal had been fruitlessly employed.

Among the remedies for promoting absorption, I forgot to mention, that it has occurred to me, that iodine might be taken internally for this purpose, and that its outward application in some form or other might assist in the production of this desirable effect; 'ere long I hope to have an opportunity of testing its powers, by applying it in an extremely diluted form, to the eye of some blind patient, where an opake state of the cornea forms one of the obstacles to vision. If a little of the hydriodate of potash ointment, were placed upon the blunt end of a probe, and applied to the eye, in the same way as the strong nitrate of silver ointment is used, I can imagine that it would be very likely to induce the absorption of dense opacities of the cornea, more speedily than the remedies in ordinary use.

ARTICLE V.

On the active Principle to be obtained from Native Plants.

BY J. K. WALKER, M. D. HUDDERSFIELD.

As the season is now advancing, when the votaries of Flora are again about to resume their delightful pursuit; permit me once more to call the attention of your readers to the harvest of medicinal resources, which await the analytical labourer in investigating the active principle of some of our indigenous plants —already has this active system been detected in the humulus, hyoscyamus, conium, and some other native plants, and from the few imperfect experiments I have attempted, I feel satisfied that, to the operative chemist, who shall possess the time

and means for that nicety of manifestation so essential to success, a rich mine of valuable materials to the medical art, will be the reward of his labours. In this age of research, it is not too much to hope, that a greater simplicity in separating the active principle of vegetables, may render the task of analysis much more economical and less elaborate than it now is, and may open a wider field of discovery. The measure of success, however, must depend not a little on the choice of proper native plants. Every one's own judgmennt will point out those parts of a plant most likely to yield successful results, but experience will be the best guide in this selection.* My examination for the present has been but very superficial, of such plants, e. g. as the pyrola minor, solidago, fumaria, bistorta, achillea, and a few others; yet, in most of these, it was obvious that a much more concentrated principle was attainable by the agency of chemistry, than we have ever yet been able to extract by the ordinary means. These, therefore, I recommend to future experimentalists. Some, indeed, are of opinion, that medicinal substances are more efficacious as they are presented to us by the hand of nature, than when administered in their isolated form, or modified by the art of man. Yet, that this is not universally true, is shewn in the instance of the sulphate of quinine, and some others, and without presuming, as some have done, that nature has, in every climate, provided appropriate remedies to diseases, it will be conceded by every competent examiner, that a more than merited neglect has been the lot, of some, of our most valuable indigenous productions. Whatever the causes were, which brought about this neglect, it is bootless now to explain—one of them, however, is undoubtedly to be found, in the rhapsodical terms in which the older authors speak of their virtues, and we daily witness the baneful effects of overstrained eulogy in our best medicines, some of which, from this cause, have sunk as much too low in the scale of professional estimation, as they were before exalted too highly. If chemistry too, by her brilliant discoveries, has contributed her share in producing this supersession of vegetable remedies, she is now compensating for the loss, by enabling us to extort from the vegetable kingdom, their active principles in a more minute form, and in some instances to create a new and more energetic power. Time, however, can alone enable us to pronounce more decidedly on the value of these new discoveries. Great indeed is his merits, who, from whatever country it may be obtained, shall add one more to the stock of valuable resources we already possess, but greater still is his, who shall detect and elicit, from the natural productions of his own country, some hitherto unknown power, which, while it unfolds the wonders of creative wisdom, may be made a welcome instrument of relief in the hour of sickness, and graft the welfare of the species on the triumphs of science.

* I have followed where it *was in my power*, the instructions laid down in the translation from the French of the third edition of Magendie's Formalaire.

ARTICLE VI.

Case of Spectral Illusions, *with Observations.*

BY ROBERT I. N. STREETEN, M. D. WORCESTER.

On the 20th of October, 1830, I was requested to see E. R., a child, eleven years of age, residing in Union Court, Cripplegate, who had become blind on the morning of that day. I was informed that she had had severe inflammation of the gums, about a week before, which was attended with considerable swelling, and some redness of the face, together with a good deal of head-ache, at times. Plant leaves had been applied with the effect of relieving the inflammation, and swelling, but the pain of the head increased, and she had some confusion of ideas with slight wandering delirium. The fever, however, was said to have been trifling, and her bodily strength not affected. In the morning of the 18th, she lost the power of distinguishing colours, all objects appearing white, or black, or some intermediate shade. She continued in this state till the morning of the 20th, the day on which I saw her, when, on her awaking, it was found that she could see only portions of things placed before her eyes, and, in about two hours after, was unable to distinguish light at all: a blister had been applied to the back of the neck the night before, and was then discharging.

Upon examination of the eyes, the pupils were found free from opacity or cloudiness: they were moderately dilated, even in the full light of day, and she said she could perceive no light; but upon exposing the eye suddenly to the action of a strong light, by closing, and afterwards quickly opening the lids, the pupils immediately contracted. The retina and the humours of the eye appeared therefore to be free from disease. She complained of pain across the forehead; the pulse was rather full and of good strength, though not quick; the skin cool; the tongue white. She had had a costive evacuation since morning, which contained an ascaris lumbricoides.

Upon enquiring further into the history of the case, I received the following extraordinary account:—About seven weeks before, on the 30th of last August, she was very much alarmed by the apparition of a man at the window, dressed in what she termed a coffin dress, which apparition recurred the next day, and again, after an interval of eight days. On the morning of the 13th of September, she saw most distinctly her father standing at the foot of the bed, with his arms folded across his breast. She immediately burst into tears, believing, as she said, that her father, who was absent from home in America, was dead. He then spoke to her, saying, weep not,—weep not,—and shook his head; then, shortly after, calling upon the Saviour twice, he appeared to fall backwards, and, as she expressed herself, vanished into the air. A short time previous to the appearance

of her father, she fancied she heard the looking-glass struck as with a stick, and then saw it fall into pieces, and yet, as she remarked to her mother, it could not be, as the glass still remained in its situation, and entire. From this time, she became the sport of spectral illusions of various descriptions. Upon one occasion, her mother being with her, she was getting out of bed, when, suddenly drawing her foot back again, she started with horror to the other side of the bed, asserting that she had been laid hold of by the cold hand of her dead father. At another time, she exclaimed, that the room was full of spirits, though, when questioned about them, she said, she neither heard nor saw anything, but that she felt conscious of their presence. During the whole of this period, though unable to suppress her terror at the illusions, she was conscious that they had no real existence, and reasoned correctly about them with her friends. Her bodily health was very bad; she suffered much from head-aches, with giddiness and beating in the temples, and, as was reported by the mother, more than once expressed her apprehensions that she should lose her sight.

Her observations were generally remarkably intelligent, and she was perfectly consistent in her accounts, though her recollection of many things which had occurred, was obviously impaired.

She was ordered four leeches to the temples, and directed to take a grain of calomel with four grains of jalap, every six hours.

On the 22d, I saw her again. The leeches had bled well, the sight returning almost immediately after. She could then distinguish colours and objects at a considerable distance, though some degree of head-ache was still felt at times. The bowels had been freely opened, the evacuations being very dark and green; the tongue was rather white; the pulse natural. The calomel and jalap powders were directed to be continued at intervals of eight hours.

On the 26th, the sight still remained imperfect, and she complained that there seemed to be a mist before her eyes; the pulse was natural; the bowels open, the stools still dark-coloured, green, and slimy. She complained also of pain across the forehead, and her memory was, in some respects, impaired. She had totally forgotten how to read, and mistook one letter for another; not that she was unable to see, and distinguish the difference between them, but she had lost the power of connecting the proper sounds of the letters with the arbitrary character representing those sounds. Leeches were again applied to the temples, and as her mouth had become somewhat tender, the powders of calomel and jalap were omitted, and one compounded of jalap and the super-tartrate of potass was ordered to be taken every morning instead.

On the 28th, she could see nearly as well as ever, and her recollection had returned. She could now read distinctly; but the abdomen felt tense, and was prominent. She complained of

gnawing pains of the bowels at times, and the motions were still dark coloured and slimy.

From this time she rapidly improved, and soon recovered the perfect use of her eye-sight, together with her usual health and spirits. She experienced no return of the spectral illusions after the first application of leeches to the temples.

I was induced to trust this case chiefly to the action of purgatives, as, from the presence of a lumbricus in the stool voided on the morning of the 20th, I concluded that the amaurotic symptoms might, in a great measure at least, depend upon the irritation arising from worms in the intestinal canal; and I was subsequently induced to persevere in the practice, both, by the relief afforded, and by the morbid nature of the excretions from the bowels, though no worms were afterwards observed to come from her.

The subject of the appearance of spectral illusions in certain states of disease, is one of great difficulty; and, notwithstanding the elaborate researches of Dr. Hibbert, still involved in considerable obscurity. The forms under which these illusions were presented to the mind of this child, may, perhaps, in part be accounted for. Thus, the first apparition of the man in a coffin dress, may probably have arisen from the strong impression made upon her by the funeral dress, and general appearance of a sister, who died early in the spring of last year. And afterwards, it was perhaps natural, that her illusions should be connected with the recollections of an absent parent; especially as considerable uncertainty existed in the minds of his friends as to his welfare. Again, the exclamations which were heard by her as proceeding from him, were probably connected with the wishes expressed in his behalf by his wife; who, in consequence of the infidel tendency of his principles, was in great anxiety as to his spiritual state. Still, however, there remains to be accounted for, the vividness of these impressions, causing them to be mistaken, upon their first appearance at least, for actual occurrences; and that, notwithstanding reasoning powers of more than ordinary acuteness, for the age, and station of life, in which the subject of them was placed.

There is a case in one of the early volumes of Nicholson's Journal, translated from the personal narration of the author in a foreign publication, and since made more generally known by the treatises of Drs. Ferriar and Hibbert, which, in many respects, resembles the present. I allude to that of Nicolai, the Prussian Bookseller. It appears, that in consequence of great and repeated agitation of mind, occurring subsequently to the neglect of an habitual blood-letting, the apparition of a deceased person was presented to his view. This was afterwards followed, and, for a length of time, by illusions of a most extraordinary description. The apparitions of persons, whether of departed friends, or of those living at a distance from him, sometimes singly, more frequently in considerable numbers, were of con-

stant occurrence. The phantasms, however, were not always resemblances of friends, they were often entirely strange to him, and occasionally even animals presented themselves before him. After this had continued for some months, he began to hear them speak. Usually, they addressed themselves to him in few words, such as those of consolation coming from the apparitions of his most intimate friends; but sometimes they appeared to carry on a conversation with one another. For a full account of the particulars of this extraordinary case, I must refer to the works before-mentioned, confining the subsequent remarks to such points as more especially bear upon the case related above.

As far as appears from the narrative of Nicolai, the illusions, in both instances, were connected with a similar physical state of the cerebral organs. There was, in each, a preternatural fulness of the vessels of the head: thus, in Nicolai, the phantasms were excited by an agitating cause, following the neglect of an habitual blood-letting; while, as he afterwards states, they immediately disappeared under the use of leeches to the temples. In the case of E. R. they were obviously connected with that state of the cerebral circulation, which has been termed determination of blood to the head; evinced by the preceding head-ache, gradual loss of the memory, &c. terminating in the occurrence of the amaurosis; and, also, by the immediate relief arising from the local abstraction of blood, by the same means which proved successful in the case of Nicolai. Her mind had likewise been much agitated by causes of distress before alluded to.

Some curious speculations connected with the subject of apparitions, naturally arise from a consideration of the phenomena in such cases as this. A very interesting one is, the liability of the nerves of sensation to become affected with false impressions, through the medium of the brain.

When, in the obscurity of twilight, a white post, or the stump of an old tree, is taken for a spectre, it is obvious that an erroneous idea of an existing object is formed in the mind, from a defective impression made upon the sense of sight. If, however, the object be approached, a nearer view, or an examination by the sense of touch, corrects the previous impression, and tends to remove the erroneous nature of the idea which had been before excited. This is, in fact, merely and simply an example of the deceptio visûs, with which, at present, we have nothing to do. But when the illusion has its seat in the mind; when there is no primary external action in the deceived sense; it is obvious that the false impression made upon that sense, is to be accounted for altogether on different principles, and will also be regulated by different laws. To give any satisfactory explanation of the causes of illusions of this kind, is quite out of our power, but in some instances, they appear to be connected with fulness of the vessels of the brain, though as to the mode in which this vascular fulness acts in the production of phantasms, we are entirely in the dark.

It has been supposed, by some authors, that illusions of this description, are usually confined to the sense of sight, and that the sense of touch is rarely liable to be affected by them. "The ideas, which have their origin in the affections of our muscular frame," observes Dr. Hibbert, "much less frequently delude us than those of vision or of hearing;" and he goes on to say, that the ideas derived from an examination with the sense of touch, "often afford the very means by which we ascertain whether an apparition is true or false." In confirmation of his remarks, the authority of Shakespear is brought forward, when Macbeth, catching at the air-drawn dagger, and finding that it eludes his grasp, exclaims,

"Art thou not, fatal vision, sensible
To feeling, as to sight? Or art thou but
A dagger of the mind;"——

And again,

"Mine eyes are made the fools o' the other senses,
Or else worth all the rest;"——

But this is merely the high-wrought imagery of a poetical fiction, and cannot, therefore, be allowed the force of argument in a grave and philosophical discussion. It may, however, be urged, that the writings of Shakespeare are so consonant to the truth of nature, that illustrations derived from them are entitled to more than common consideration. This will, however, form no objection, when it is considered, that the ideas formed of the supposed unsubstantial nature of these aerial shades, by superior and cultivated minds, are such as to lead to the supposition, that they must necessarily elude the grasp of mortal hand. Thus, Virgil, in the meeting of Æneas with the shade of Anchises, describes the spirit as eluding the attempted embrace of his son.

"Ter conatus ibi collo dare brachia circum;
Ter frustra comprensa manus effugit imago,
Par levibus ventis, volucrique simillima somno."

And again, Shakespeare makes Marcellus, speaking of the Ghost in Hamlet, exclaim,

"We do it wrong, being so majestical,
To offer it the shew of violence;
For it is, as the air, invulnerable,
And our vain blows malicious mockery."

These, however, are not actual occurrences, but the opinions of Shakespeare and Virgil, and are too refined for those who are commonly the subjects of spectral appearances; and the nature of the illusion in such persons as are unacquainted with, or uninfluenced by them, will, I conceive, always partake of the circumstances under which it occurs.

The sense of touch, then, may be less frequently subjected to illusory sensations, than the senses of sight and hearing; but there is no reason to believe, that it is not equally liable to be acted upon; and the sole reasons why the illusion less frequently takes place, appears to be, either the original idea formed of the

nature of phantasms, or the unwillingness of those who believe in apparitions, to come in close contact with the creations of their own disordered imaginations. When, however, in this last case, the contact has been supposed to take place by the subject of an apparition, the sense of touch, in the instances with which I am acquainted, has been equally the sport of illusion with the other senses.

Lord Byron seems to have felt the full force of this, when, in the Siege of Corinth, he describes the apparition of Francisca standing by the side of Alp, the Renegade, and pleading with him to return to the creed of his fathers.

"Upon his hand she laid her own—
Light was the touch, but it thrill'd to the bone,
And shot a chillness to his heart,
Which fixed him beyond the power to start.
Though slight was the grasp so mortal cold."

The case of E. R. remarkably illustrates this view of the subject, the illusions having affected the sense of touch, as well as the senses of sight and hearing. When she conceived herself to be grasped by the death-cold hand of her deceased parent, the illusion appears to have been complete. In the celebrated apparition which is reported to have occurred in the B——d family, there was the same affection of the three senses; in connection, however, with other circumstances, which, whatever explanation they may admit of, can hardly be accounted for upon Dr. Hibbert's theory of past feelings renovated.

The sense of smell, also, under appropriate circumstances, becomes the subject of illusion; witness the sulphureous odour commonly experienced, or, at least, said to be experienced, in the narrated apparitions of the inhabitants of the lower world, whether of the powers of darkness themselves, or of the spirits of those supposed to be subjected to their domination.

To extend these remarks to a greater length, would be unsuitable in this place, and foreign to the objects of the present paper. But this subject is one of great interest, and presents many points well worthy of consideration by those who have time and inclination for the pursuit.

ARTICLE VII.

On the Appearance of the Aurora Borealis, at Malvern.

BY MR. ADDISON,

Surgeon to H. R. H. the Duchess of Kent, Malvern.

On the 11th of December, about 11 p. m. being out of doors my attention was arrested to a clear diffused light in the northern part of the heavens, resembling the twilight of a summer evening, but of a clearer yellow. The wind was blowing from the N. W.; the air soon afterwards became cloudy, and I thought nothing more of the circumstance.

On the following evening, the atmosphere being perfectly cloudless, the stars shining brilliantly, and the wind fresh from N. W.; the same diffuse light was very distinct, but with this were others, no doubt, referable to that curious phenomenon, the Aurora Borealis.

Between 7 and 8 p. m. while noticing the diffused light abovementioned, I observed a remarkable luminous appearance in the north-east, which was of a conical figure, the broadest portion turned towards the zenith, and at an altitude of about 15° from the horizon, it appeared and disappeared alternately, for a considerable time; there was also another mass, nearly due north, like a thin luminous cloud, sometimes throwing out a strong pale lambent light, at others totally disappearing, it would then re-appear in a different place, lengthening out at right angles to the magnetic meridian, two or three times it was seen stretched across the constellation of the Great Bear, and the larger stars could be plainly distinguished through it, its motions were not quick, disappearing and appearing again gradually. The thermometer at this time stood at 20°, and the ground was frozen quite hard. In the northern horizon, was a dark bank of vapour, and above this was a broad horizontal band of light, similar to that which is often observed previous to the moon's rising. Now and then in the broad diffuse light which extended from this band, various striæ could be faintly perceived; sometimes the light appeared fainter in one direction, and concentrated in another, and then afterward the strong luminous appearance like a thin cloud, would gradually shine out for a few seconds, of considerable brilliancy, and then quite go away.

Dec. 13th.—The thermometer fell, in the course of last night, to 27°.

The day is beautifully clear towards the afternoon, a thin covering of high *stratus* overspreads the heavens, and about 3 p. m. there was a large solar halo—barometer 30.35. The moon at this time 30′. I hear that a gentleman in the neighbourhood was called up about midnight on the 11th, to see a great light, thought to be fires; it illuminated the rooms exposed to the northward, very considerably. About half-past 9 p. m. the same phenomena were observed, the light sometimes appeared of an arched form, extending across the meridian, about midway between the polar star and the horizon—its zenith lying pretty nearly in the magnetic meridian—sometimes it showed itself in broad patches, chiefly to the westward, appearing and disappearing, as before, not very suddenly, and without any shooting *or darting*—and not at all warranting the name of *merry dancer*. When I first went, the sky was generally overspread with a thin and pretty uniform stratus, but it was more clear to the northward than to the southward, where the stars were generally obscure. After a little time, it became perfectly clear, but the light was not at all altered, several times it burst gradually forth with considerable brilliancy, very much greater

and much broader than the milky way. The general diffused light, like twilight in summer, which first arrested my attention on the evening of the 11th, is not now observable. The stars were again plainly seen appearing through the light. Wind fresh, southerly.

Dec. 14th.—This has been a beautiful day. Wind S. W. light, perfectly clear, excepting a very thin stratum of high vapour, not at all obstructing the sun's rays; some very attenuated streaks of cloud lie parallel to the magnetic meridian in the higher regions. Therm. in the morning, 30°. About an hour before sunset, my attention was arrested to various substances, which were quite damp; many of them standing in large drops, on the stones and bricks in particular; many other substances, as wood, &c. were perfectly dry; this was a copious deposition of moisture upon the more perfect conductors, in the form of dew, and the atmosphere became sensibly clearer, and very perceptibly warmer. At 7 p. m. the air was perfectly still, and very clear, with a remarkably mild feel, the thermometer towards the east standing at 40.° There has been very little hoar frost the last few nights, altho' they have been for the most part clear, (there is ice nearly half an inch thick). This evening the heavens are particularly bright. A great number of small meteors or falling stars have been visible, darting about in various directions, the last three evenings.

11 p. m.—There has been no luminous appearance this evening. The heavens are quite clear, except a few detached clouds towards the horizon in the N. E. *every thing* is perfectly wet with dew, there is a soft southerly air. Therm. 39½°. Barom. 30.50.

15th.—This morning very foggy in the vale below, and some heavy clouds over head, affording strong marks of electricity. The smoke moves from the southward, but the lower clouds are moving slowly from the N. W. A little light rain is falling. Barom. 30.50. Therm. 42°.

Evening.—It has been raining the whole day. Wind light from W. N. W.

Most persons doubtless remember the remarkable luminous arch which was seen in the heavens on the 29th of Sept. 1828, at right angles to the magnetic meridian, stretching from east to west through the zenith, and such will easily comprehend the appearances I have attempted to describe. It is said, that in some places, an Aurora Borealis is considered as indicating fair weather, though I believe it is as often followed by wet as by frost; in this instance, we have seen this to be the case.*

* I find in the Annals of Philosophy for 1819, an account of an Aurora observed at Gosport, by Dr. W. Burney, and accompanied with phenomena very similar to those I have detailed, *a fresh wind from the northward* at the time of its appearance from 7 to 9 p. m. *a fall of only* 1° *in the thermometer* during the night—"whilst, according to the nocturnal diminution of tempera-

Since writing the preceding remarks, the Aurora has been very magnificent (Dec. 25th.) The weather for the last three days has been very severe; on the night of the 23d, the thermometer fell to 16°, and on the night of the 24th, to 12°; to-day it has been ranging from 19° to 24°, being occasionally overcast with a thin *stratus*. This evening, 7 p. m. it is quite clear, the moon shining brightly, nevertheless the Aurora is beautiful, three or four arches of bright light extending from west to east, and a multitude of beams, pillars, and coruscations playing about in a very *merry* manner. The appearance altogether being (notwithstanding the light of the moon) truly magnificent. The strongest and brightest arch extended between the north star and the horizon, the pillars and beams of light oscillating and dancing in various directions, at times being uncommonly brilliant. The wind is strong at N. W. and the light in its motions is evidently very little affected by it, moving alternately from east to west, and *vice versa* without difficulty; then returning upwards towards the zenith, appearing and disappearing, lengthening, and shortening, with great rapidity.

Sometimes, a very bright mass suddenly appears close to the horizon, then again in five or six different places, shortening itself, and moving from side to side, in a very curious manner.

10 p. m.—The Aurora is still visible.

A large and beautiful arch extending across the magnetic meridian, which soon divided itself into five or six, and these seemed to be crossed by bars of more luminous matter, moving about and shooting upwards and downwards; the night is remarkably clear. Therm. 18°.

Dec. 26.—The thermometer remained nearly stationary last night, notwithstanding the great clearness of the atmosphere.

5 p. m.—This has been a very fine day, thermometer 24°. There are some high cirri in the heavens, arched over the zenith with others nearer the horizon, and lying parallel to the magnetic meridian, they exhibit a very uncommon and beautiful appearance; the air has been calm, a light air moving from the N. E. and very distant sounds are distinctly heard. I allude more particularly to some church bells, five or six miles off.

8 p. m.—The heavens are generally overspread with a thin high stratus—there is a large halo round the moon—the air is still, except a high current which is now moving from the southward. Therm. 24.°

11 p. m.—Thick and cloudy, moon just perceptible at times, wind moderate, S. E. top of the hill clothed with mist.

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ture in this neighbourhood, with a northerly wind, it should have been 6°′. *Meteoric phenomena and dew* indicating, as he observes, the acquisition of a considerable quantity of electric matter by the lower stratum of air, and followed in 60 hours, with a gale of wind from the S. W. and *heavy rain.*"

27th.—A considerable quantity of snow fell last night, and it has been snowing most part of the day. Wind light, S. S. E. Therm. 11 p. m. 30° cloudy and hazy.*

28th.—There has been a great fall of snow during the night, the day is cloudy. Therm.32°. Snow, 8 in. deep, and no drift.

The Aurora Borealis in high northern latitudes is by no means an uncommon occurrence, though more rare in these more southern parts; during the seventeenth century it seems to have been uncommon in Great Britain, more frequent in the eighteenth, and judging from the few observations which have been published of its appearance, it seems to have been again more uncommon, particularly during the commencement of the present century. Of the nature and origin of this singular phenomenon, we are yet ignorant, though from the effects it often produces upon the needle, it is no doubt connected and influenced by those subtle causes which give rise to the phenomena of electricity and magnetism, its luminous appearance is thought to depend upon some modification of vapour existing in the atmosphere, and this is the more probable, from the circumstance that some late observations made during the expeditions to the North Pole, prove that the Aurora Borealis generally occurs much lower in the atmosphere than was formerly supposed. Most observers had calculated the height of the Aurora at 500 or 600 English miles. Cavendish reckoned the height of one observed in London in February, 1784, at 62 miles, which was much lower than any former observer had considered it. But Dr. Richardson and Lieut. Hood satisfactorily prove that the average height of the Aurora they observed, was not more than 7 or 8 miles. That the matter emitting the light of an Aurora is magnetised, there can be little doubt, and if this matter is attenuated vapour, its polarity will help to explain the appearances which the meteor usually presents, of beams, cylindars, arches, &c. while the light may result from some electric motive power which it attains, causing a slow transference of electricity through these polarized strata of their vapour. It has been supposed that the appearance of beams or cylinders shooting upwards, is an essential part of this interesting phenomenon. But Dr. Richardson remarks, that the Aurora frequently appeared to him in small detached masses, for some time before it assumed that convergency towards the opposite parts of the horizon, producing the arch formed, and this quite agrees with the condition observed in the light which first called forth these remarks.

* I understand that the Aurora Borealis has been seen by many persons during the last fortnight, and I have heard several remark upon the unusual degree of light at this season during several nights, the more observable on account of the absence of the moon, it being new moon. On the 15th, and this I myself noticed, it was no doubt referrable to the Aurora, which afforded a considerable light, even when clouds intervened to obscure its more notable effects.

ARTICLE VIII.

Singular case of disease of the upper portion of the Spinal Column.

BY THE SAME.

A young lady, æt. 20, in the summer and autumn of 1829, complained of slight pains about the neck, and being otherwise in good health, they were attributed to a little cold. Sometimes her sleep at night was disturbed by them. Therefore embrocations, and keeping the parts warm with flannel, were adopted; nevertheless, they continued occasionally troublesome. The winter of 29 and 30, was, as will be remembered, one of great severity. About the beginning of February, the weather became more mild for a few days, and wishing to return to her home, being on a visit to some friends, this interval was selected. It happened during the night, she had to travel nearly an hundred miles; the frost again set in with great rigour, accompanied with a light fall of snow, rendering the roads so slippery, that she was induced, with other passengers, at the solicitation of the coachman, to get out and walk down a steep hill, about two o'clock in the morning, from which she caught a severe cold.

Upon reaching home, her friends thought her looking rather thin, and although the cough and other immediate symptoms from the catarrh, gave way to the usual remedies, she continued indisposed for any exertion; was soon tired; and courted the recumbent posture. In the ensuing May, she went to the sea for change of air; her symptoms, at this time, were langour, lowness of spirits, and a little cough, together with the old pains about the back part of the neck, and some enlargement of the cervical glands. A medical practitioner was consulted, who advised bathing, &c. He considered her threatened with pulmonary consumption, observing that he thought little of the pains about the neck, which would get well, provided something could be done to improve her general health. The glands, however, continuing slowly to increase, he advised the iodine ointment and a blister. Not much benefitted, she returned home the beginning of June, still complaining of pains, sometimes in the swellings, and sometimes in the muscles of the neck. Here the use of the iodine ointment was continued, together with tonic medicines, and, occasionally, horse exercise; blisters being also now and then applied for the pains in the neck.

Notwithstanding these measures, the patient seemed slowly to emaciate, and her appetite was very indifferent; the glandular swellings continued stationary, and the pains were not removed; the cough, however, had disappeared, and the spirits, although occasionally a little dejected, were, upon the whole, pretty good.

About the middle of June, this young lady returned again to visit her friends with whom she passed the summer and autumn

of 1829. At this time she was very thin, with some degree of general debility. There was a large glandular swelling the size of a small pea, under the ear, close to the anterior border of the *right* sterno cleido mastoid, and rather behind and below the angle of the lower jaw; there was also a chain of small glands, increased in size, along the posterior border of the left sterno cleido muscle, extending from below the mastoid process, down two or three inches; the head was rather limited in its motions; the *old* pains across the back of the neck and stiffness being troublesome at times. All the diseased parts were subjected to examination; the spinous processes of the vertebræ were not tender, but there was *some pain produced by pressing on either side of the neck, close to the head;* the recumbent posture, therefore, was advised, but being productive of more pain and uneasiness than the erect, particularly if, in this latter position, the head was supported on the hand or a pillow, it was not persevered in. During this, and the following month of July, therefore, she took gentle exercise, some alterative at night, and a light chalybeate during the day, using, at the same time, to the enlarged gland behind the jaw, sometimes the iodine ointment, occasionally a small blister, and leeches. A larger blister was also again placed between the shoulders, for the *uneasiness about the neck*, which prevented her sleeping comfortably at night. She rode out two or three times, but upon one of these occasions, the motion of the carriage encreased the pain in the neck a good deal.

During the month of August, pains came on gradually across the shoulders, greatly disturbing her rest; the neck was therefore again minutely examined; the swellings were still hard, and the larger one of the right side, appeared deeply attached behind the angle of the jaw. A spot over the atlas on each side, was painful when pressed upon firmly, and there was some thickening of the integuments, close to the occiput. A large blister was again applied high up in the neck, and twenty leeches over the contiguous parts. She was directed a tea spoonful of liq. potass twice a day, in malt liquor. The symptoms not giving way to this treatment, the blister was healed and a seton inserted; and she was again ordered to keep the recumbent posture *as much as possible.* In spite of these measures, her nights became gradually more and more restless, and she was obliged to be bolstered nearly upright in bed; or was often induced to get out two or three times in the night, to sit up in a chair and lean her head upon the hand, which afforded some relief. During the day, the pains were less, *being always increased by the recumbent position.* Under these circumstances, she could hardly be persuaded to keep that posture, and she used to sit up a considerable portion of the day. For some time there had been, during sleep, a good deal of snoring, and this latterly had increased so much, that the noise frequently awoke her. The chief pain seemed, at this time, to be confined to the shoulders, and she described it as

if something was gnawing the flesh off the bones. Moxa was now applied freely, so as to blister the surface on each side, immediately over the spots where pain was felt on pressure; and the seton becoming very sore, without affording any benefit, it was removed, and leeches, to the number of 20 or 30, applied two or three times. During all this, the appetite was very good, and she moved about the house, though the loss of flesh and strength continued; the head was always reclined upon some support, as the hand, or high back of a chair, the recumbent posture being still very painful.

The remedies adopted, afforded no relief to the pains in the shoulders, and she was ordered to try the warm bath; she took only two, for they aggravated all the painful symptoms.

One morning, in the latter part of September, while sitting in a chair, a very severe pain darted suddenly up the back part of the head, and it so increased in violence, that she went immediately to bed. In consequence of this, her hair was ordered to be cut off, and the back part of the head shaved; a large caustic was put over the atlas, and several leeches were applied along the vertebral column below the left ear, the pains on the *left side* of the head, nevertheless, increased, coming on in the most violent paroxysms, leaving her much exhausted, and in a copious perspiration. A grain of colomel, with 2 grs. of pulv. ipecac. comp. was exhibited every four hours. In the course of three or four days, the constitution was fully under the influence of this remedy, without the least abatement of the pains; on the contrary, pricking sensations were felt in the fingers of the *right* superior extremity, and there was evidently a loss of muscular power in it; the pains over the *left* side of the head, coming on in frequent and distressingly violent paroxysms, accompanied with numbness of the integuments. Upon pressing over the transverse processes of the left superior cervical vertebra, but little pain was complained of at the part, but the pressure immediately brought on the pains on the left side of the head; five and twenty leeches were therefore immediately applied, in this situation, with some slight relief. During the time she was awake, the breathing was free and regular, but when asleep, it was now become very irregular, with snoring almost amounting to stertor, frothy saliva issuing from the mouth, but this was all removed upon awaking, the intellectual faculties being perfectly entire.

Notwithstanding all that had been done, the pain soon attacked the *right* side of the head, with pricking and tingling sensations in the *left* arm and fingers. The right superior extremity had, by this time, nearly lost all motion, the *left* side of the head, however, was more free from pain, the large caustics at the back of the neck were discharging properly; twenty leeches were applied over the transverse processes of the vertebræ on this (left) side, and another smaller caustic in the same same situation; she now complained that every thing she touched felt rough like a nutmeg-grater, but this was not the case without

an exercise of volition, or some other exertion of the muscles on her part, when she attempted to feel the sheets of the bed, or the hand of another person, she said, they felt as if covered with rough sand; but if the sheet, or the hand of another, was rubbed against the balls of her fingers while they remained passive, this sensation of roughness was not then communicated. The severe pains in the head, were always induced by pressure over the transverse processes of the two or three superior vertebræ of the neck. The left hand and arm subsequently became affected in the same gradual way as the right, until all motion and sensation were entirely lost. The body was now greatly emaciated; the lower extremities soon after were affected in the same way, as the superior, gradually losing *all motion and sensation;* sleep was sometimes procured, for short intervals, by large doses of laudanum, and these were given without inconvenience; every intellectual faculty remaining perfectly entire; the bowels were relieved by injections. The restlessness, latterly, became very distressing, she required some change of posture, either to the one side or the other, or some alteration in the position of the limbs, continually complained of pain, notwithstanding the insensibility to external impression, and from her total helplessness; this gave her nurses constant employment. About the end of October, she was sensible of a grating noise in the neck, upon the slightest motion of the head. From her constant call for change of posture, this became a matter of extreme anxiety, particularly, as the grating soon afterwards was perceptible to any one listening attentively at the bedside, and very obvious by the use of stethoscope. The patient lay in this totally helpless and very restless state for about a fortnight, dreadfully reduced, the fæces and urine latterly came away involuntarily, and death at last closed the scene, she expired with the most perfect calmness and resignation, retaining every intellectual faculty until within a few moments of the last expiration.

Leave was obtained to examine the state of the diseased part. Upon exposing the cervical vertebræ from behind, and separating them from their connexions anteriorly, previous to their removal, a considerable quantity of purulent matter escaped, mixed with gritty portions of bone, and upon introducing the finger, the anterior portions of the two superior vertebræ were found completely carious, particularly on the left side, so much so, that the head appeared in a great measure separated from the spinal column, the ligaments and articulating surfaces being almost wholly destroyed. The vertebræ were then removed from the 1st to the 6th inclusive; the right superior oblique process of the atlas was quite carious, and its ligaments destroyed, the body of the dentata was in a similar state, particularly on the left side; the processus dentatus, with its ligamentous connections, perpendicular and transverse, was entirely destroyed. The external surface of the theca vertebralis posteriorly, had a natural appearance, but anteriorly it was much thickened by a deposi-

tion of lymph, infiltrated with pus, and this extended from the first to the fourth vertebra: when laid open, the membranes internally, and the spinal column itself, appeared healthy and natural, as likewise the origins of the several nerves proceeding therefrom; the ligamentum denticulatum was natural and complete.

Upon this singular and melancholy case, we may remark—

1st.—The slight and rheumatic-like pain occurring at intervals for some time, without any disturbance of the general health, but accompanied with some degree of loss of flesh.

2nd.—The occurrence of the glandular swellings after exposure to cold, and the continuance of the former pain, with languor and loss of flesh.

3rd.—The distressing gnawing pains of the shoulders preventing sleep, and the snoring when that state was attained.

4th.—The painfulness of the recumbent posture at this time, and the comparative ease of the erect posture, with support for the head.

5th.—The increase of the snoring, and extreme irregularity of breathing during sleep.

6th.—The sudden and severe pain of the *left* side of the head, followed with some loss of power in the *right* superior extremity, and the pain afterwards in the *right* side of the head, with loss of power in the *left* superior extremity.

7th.—The curious sensations of roughness which attended the exercise of volition, just before all power of motion in the hands had disappeared, and the pricking and tingling sensations terminating in the entire loss of motion and feeling, which gradually extended over the whole body.

8th.—The extreme restlessness and pains felt in different parts of the body, notwithstanding the total loss of motion, and complete insensibility to external impressions, together with the grating noise at the top of the neck.

9th.—The complete integrity of all the senses throughout, except that of touch.

Lastly.—The uncontrolable character of the disease, not one single remedy which was had recourse to, either internal or external, affording any beneficial effect.

ARTICLE IX.

Case of Abdominal Inflammation, with a Foreign Body in the Appendix Vermiformis Cœci.

BY MR. WALDRON, SURGEON, BATH.

On Friday, July 9, 1830, late at night, I was requested to see the eldest son of Colonel Payne, of this city, a young gentleman twelve years and a half old. I found him labouring under severe pain in the bowels; pulse 120, quick and feeble, and unable to bear the slightest pressure on the abdomen. I immediately bled

him to seven ounces, which produced decided syncope. The pulse sank to 80; the pain nearly left him, and sickness, from which he had before suffered, did not return during the night. So far back as the Tuesday evening, he had complained of chilliness and pain in the bowels; the Wednesday night he passed with restlessnes, vomiting, and purging. On the Thursday evening, he was prescribed for by a medical friend; during the night he was attacked with a severe rigor, which lasted some hours, and a proportionate degree of heat succeeded. The medicine prescribed had operated copiously. The blood I had drawn, bore scarcely any mark of inflammation, and when I saw him on the Saturday morning, I found him with a decided alleviation of symptoms; his pulse was not more than 80, but too compressible. I had put him on the following plan of medicine during the night. ℞ Hydrarg. subm. gr. i. Pulv. Jacobi ver gr. ij. P. Cretæ comp. cu opio gr. iv. Misce ft. pulvis 4ta quaque horâ sumendus.

As he complained of considerable thirst, I ordered half an ounce of cream of tartar, an ounce of sugar to a quart of water, with a little lemon peel, as a saline beverage.

July 10th.—I now examined his abdomen, and still found he could ill bear pressure. I therefore directed 12 leeches to be applied, and warm fomentations, which he had also used freely on the night preceding. It was obvious, from the state of the pulse, that he would not bear further general blood-letting, and moreover, it was a marked case of erythematic inflammation, as described by that able authority, Dr. Mason Good. I therefore was cautious in further depleting the system, still I deemed the application of leeches necessary. In justice to myself I would remark that, at this period I was in ignorance of that length of time which had elapsed prior to my being called in, and his symptoms of inflammation of the bowels having commenced. The leeches drew scarcely any blood, but he complained of most excruciating pain during their application. He continued tranquil during the whole day; pulse 80, still too compressible. The bowels had been acted on three times, and the evacuations were dark and morbid. I again directed the bowels to be fomented at bed time, and the following medicine to be taken. ℞ Hydrarg. subm. gr. i. Ext. papav alb. gr. ij. Misce ft pil. horâ somni sumenda. ℞ Pulv. rhei. Potassæ tart. aa gr. vi. Aq. menth pip ℥ss. Infusi sennæ ℥i. Misce ft haust. cras primo mane sumendus.

July 11th.—He passed a tolerable night; pulse 80; pain in the bowels not so great; three motions produced by the draught; countenance cheerful. He passed the whole of this day in tolerable tranquillity, and without much complaint, and when I saw him at 10 o'clock, as he was not inclined to sleep, I directed a powder to be taken, of six grains of the pulv. ipecac. comp.

July 12th.—When I saw him this morning, he expressed himself as very much better, he had passed a very tranquil night, and slept several hours at a time; his pulse still 80, and too

compressible; countenance cheerful, and tongue more moist; thirst diminished; the bowels had acted twice, the evacuations appeared more healthy; he continued to drink his imperial; the powder was repeated at bed time.

July 13.—He has passed a tranquil night, pulse 80; and too compressible; bowels open three times, and complains of griping evacuations; bilious, tongue not so clean, inclining to yellow, with edges of two deep a hue; still expresses himself better, and is cheerful. I now prescribed the following medicine, and directed a little beef tea or mutton broth to be given him.

℞ Infusi calumbæ, ℥vss. Syrup croci ℥ij. Misce ft mist. cujus capt. coch. iij. ampla mane et vespere quotidie cum pilula sequenti. ℞ Pil. hydrarg. gr. i. Pulv. ipecac. gr. ¼. Pulv. rhei, gr. iij. Ext. papav alb. gr. i. Misce ft pil.

At five o'clock this day, I was suddenly sent for, and found Master Payne in most agonizing torture from pain in the bowels. I immediately had recourse to warm fomentations and the warm bath, took a small quantity of blood from the arm, threw up warm injections of thin gruel frequently. Dr. Bowie was now called in, and finding our patient vomiting up a large quantity of vitiated bile, and the nausea continuing, directed large doses of calcined magnesia to be given, this not succeeding, but the powers of the system to a certain degree returning, twelve leeches were applied, but like those applied on the 12th, fell off, and drew scarcely any blood; a blister was directed to the pit of the stomach, and the injections of warm gruel continued; calomel and opium were also thrown in. From that momoment I found Master P. suffering from such a violent exacerbation of pain, I feared the case was hopeless, still I knew it was my duty not to relax in my endeavours to afford him relief, and my friend Dr. Bowie, acting with similar views, and feeling either directed or agreed to what was done; at eight o'clock this morning, July 14, he expired during violent struggles and sickness.

Sectio Cadaveris.—Six hours after death, I examined the body in the presence of Dr. Bowie; considerable tympany and discolouration of the abdomen had taken place; on cutting through its parietes, a considerable quantity of fluid escaped. Prior to attempting any part of description of the state of the viscera of the abdomen, I would observe, that they exhibited every possible mark of inflammation; congestion of vessels; ulceration of some parts; most extensive adhesion of others; discolouration of the small and large intestines throughout their whole course, and mortification extending in large patches from one end of the canal to the other; large portions of coagulable lymph were thrown out, uniting firmly the peritoneal coverings and folds of the mesentery: the omentum was in a state of partial ulceration and gangrene; and a considerable quantity of pus was found in the abdomen. I passed a ligature round the duodenum at its commencement, in two points, and making a divi-

sion between, proceeded to trace the alimentary canal, from one end to the other; on arriving at the appendix vermiformis, Dr. Bowie and myself were led to examine this part with every attention. First, on account of the complete state of sphacelus in which it appeared, and secondly, on perceiving a peculiarity of appearance as though an extraneous body were lodged in it. I separated the ileum, a few inches above the cœcum, and also the colon, a few inches from its commencement, and removing it from the body, proceeded to lay it open; on laying open the appendix vermiformis, an extraneous body was found, which consisted of a substance resembling a pill, brittle and hard. The liver and other viscera of the abdomen exhibited marks of inflammation.

Observations.—The immediate relief afforded Master Payne by the first bleeding, and his progressive amendment for two whole days; his having passed the two nights preceding his last fatal accession of disease, in comfort; his pulse 80; skin moist; bowels acting, and countenance cheerful, with feelings and expressions of decided amendment, led Dr. Bowie and myself to this conclusion, viz. :—that the substance found in the appendix vermiformis acted as an exciting cause of inflammation; that the means employed had for a time allayed it, but after a certain time, the effect produced on the system, ceasing, and increased action taking place, efforts were made to dislodge this extraneous body; the result of which was, agonizing pain, vomiting and inflammation, with all its direful consequences. The state of sphacelus in which the bowel appeared, and the extensive adhesions which were formed, rendered the dissection difficult; and this was, in all probability, produced by the violent efforts made to dislodge the substance found in the appendix vermiformis, aided by the inflammation thus set up; that the history of this case will not find many precedents is quite clear, and the violent exacerbation which hurried Master Payne into the grave, cannot, by ordinary causes, be accounted for. How far this view of Dr. Bowie and myself be correct, we leave to our professional brethren to judge.

P. S.—Since writing the above, I have received Mr. Cuff's analysis of the substance found in the appendix vermiformis, which is as follows, viz, :—Wholly animal matter, with a minute portion of carbonate of lime, its weight two grains.

When taken from the appendix vermiformis, it was of the size of a large pill, and apparently both to Dr. Bowie and myself, large enough to weigh eight grains, supposing it to be constituted of materials not unusually light. When, however, it became dried and friable, it weighed, as appears from Mr. Cuff, whose accuracy I do not doubt, only two grains.

ARTICLE X.

CLINICAL OBSERVATIONS.

The dependence of Hysteria upon Cerebral and Spinal Irritation.—Inflamed Heart.—Epilepsy.—Deaths from swallowing boiling water.

BY JOHN DARWALL, M. D.

Physician to the Birmingham Dispensary.

THAT many of those anomalous symptoms which have been comprehended under the title of hysteria, depend essentially upon some affection of the brain and spinal medulla, seems now to be generally acknowledged. It is not, however, very frequently, that such evidence can be obtained of the correctness of an opinion, as the two following cases afford. In both of them there was manifest affection of the spine. In both there were the symptoms which are commonly known as nervous; and in both, the latter disappeared as the former affection diminished. I shall give the cases as they appear in my case-book.

January 10, 1831.—Master H. O. æt. 14. Dizziness, pain across the forehead, noise in the ear coming on suddenly, preventing his hearing. Dyspnœa; palpitation of the heart; no particular sound with the stethoscope; much tenderness over the region of the heart, and over the left side; spirits very variable, at times exceedingly low; pulse small.

The spine is much curved to the right side, so that the space between the vertebral column and the base of the scapula, is much greater on the left, than it is on the right. Great tenderness over the seventh and eighth dorsal vertebræ. Bowels costive; urine natural; appetite good.

Has been unwell for twelve months, and always felt very giddy at night. Imponantur hirudines duodecim vertebris dolentibus. ℞ Hydrarg. submuriatis, gr. ii. Pulv. rhæi. Pulv. Jalapæ, a gr. iij. ft pulvis 4ta quâque horâ sumendus, donec alvus solvatur.

To assume the reclining posture whenever in the house, and not to suspend it for more than half an hour at a time, nor more than two hours during the whole day. To walk out daily.

13th.—Has had less palpitation of the heart. The breath has been very bad. There is still tenderness in the spine, and in a spot between the heart and the clavicle, pressure upon which excites the action of the heart, although the respiration is very strong beneath. No cough; the leeches bled well, and the medicine brought away much offensive dark-coloured fœces. ℞ Infusi calumbæ. Infusi gentianæ. Infusi sennæ, a ℥ss. ter die. ℞ Pilulæ hydrargri gr. v. Ft pil. 2ndâ quâque nocte sumenda.

February 3.—Dyspnœa much the same. Has had scarcely any palpitation nor dizziness since the last report. No tenderness over the heart. Bowels open; appetite good; spirits more equable. The spine is not so distorted, but the eleventh dorsal

vertebra is much more depressed than the rest, and is tender, as also is the twelfth. Admoveatur vertebris dorsi emplastrum lyttæ. Cont. medicamenta.

March 10.—In every respect better. The curvature of the spine has almost disappeared. Cont. medicamenta.

April 8.—Says he is quite well; that he has no palpitation, except after great exercise; scarcely any curvature of the spine remains.

February 15, 1831.—Ann G. æt. 21, serves in a shop. Head-ache, giddiness, tinnitus aurium, low spirited, palpitation of the heart, dyspnœa, not commonly any cough. Flatulence, swelled after eating. Bowels very costive; sometimes three and four days elapse between each evacuation. Catamenia regular as to time, but last two days only; very black and painful. Slight leucorrhœa. Urine hysterical; at times very scanty and turbid, at others very copious and limpid. Pain over the region of the heart, with considerable tenderness on this spot. The spine is curved laterally, so that the middle dorsal vertebræ are within half an inch of the right scapula. Tongue reddish and dry in the morning. Pulse small and rapid. No tenderness of the spine. The spine has been curved four or five years, and the other symptoms have been present, the whole time; but she has been much worse within the last month. Respiration with the stethoscope perfectly natural.

To lie down, and never to leave the recumbent posture for more than half an hour at a time. To walk out daily. Regular plain diet. ℞ Pilulæ aloes comp. Pilulæ hydrarg. S. C. a. ʒss. Divide massam in pilulas xii., sumt. iij., unâ quâque nocte. ℞ Infusi calumbæ, ℥viij. Spiritus ammoniæ arom. ʒij. ♏ sumat coch iij. larga ter die.

22nd.—Has lain down almost constantly, as directed, and thinks herself rather better; but the symptoms are still present, though, perhaps, in a less degree. Bowels open twice a day; evacuations very offensive; catamenia are come on this morning, but she has at present no pain, and they are less black. Cont. medicamenta.

March 1.—Better generally; catamenia were less painful. Has had much less pain at the heart, and there is less tenderness. Tongue cleaner; less leucorrhœa; pulse 84; much less palpitation. Cont. medicamenta atque regimen victus.

8th.—Palpitation of the heart relieved; breath better; less swelled after taking food; bowels open; evacuations dark coloured and offensive; rather relaxed. Upon the whole is better. The tenderness over the region of the heart is quite gone.

℞ Decoct. aloes comp. Infusi anthemidis. Infusi cascarillæ a ℥ss. ter die. ℞ Pilulæ hydrargri gr. v. ft pilula 2ndâ quâque nocte sumenda.

15th.—In every respect better; much less palpitation; less head-ache; less dyspnœa; no leucorrhœa; not swelled after taking food; evacuations rather costive, still dark coloured, and

offensive. Considerable flatulence; tongue more natural; appetite better; pulse 84, small; not so easily hurried; the curvature of the spine is less. Cont. medicamenta, etc.

22nd.—The catamenia have been present, but only lasted one day, and were very scanty. The bowels are open only once in two days, the appetite at the same time being good. There is this morning considerable palpitation of the heart, with irregular pulse. Spirits very low. Much tenderness over the seventh dorsal vertebra. The catamenia were very black and painful. Admoveantur hirudines duodecim vertebræ dolenti. Adde misturæ magnes. sulphatis, ℥i.

25th.—The leeches bled well; has had very little palpitation of the heart since; spirits better; bowels open twice or three times a day. Pulse 92, regular; no tenderness now in the spine; appetite good. Cont. medicamenta.

29th.—The breathing is still difficult, but only when moving. Says that she is much better. Has neither giddiness, head-ache, nor noise in the ears. Palpitation of the heart only when she walks. Bowels open when she takes the pills, not otherwise. Cont. medicamenta.

This patient is still under treatment, and the spine, though very much curved, is far less so than when she first applied for assistance. Indeed, considering the time which has elapsed from the commencement of the distortion of the vertebral column, it cannot be reasonably expected that it will ever entirely recover the perpendicular direction, as the bodies of the vertebræ have probably in some degree fitted themselves, by this time, to their present situation. It is, however, particularly worthy of remark, that while in the first case every symptom has disappeared with the return of the spine to its natural state, and that the tenderness and palpitation were lessened by leeches to the two painful vertebræ; in the latter, one of the vertebræ became tender at the very time that there was an aggravation of the general symptoms, which were also relieved by local depletion.

The next case I shall relate, is more completely a case of hysteria, and was produced by repeated hæmorrhage; nor is the immediate connection of the symptoms with the brain and spinal chord so evident; still the relief afforded by the treatment compels us to refer it to this origin.

March 1, 1830.—Mrs. E. æt. 35, has been married seven years; has had two living children; has miscarried four times within the last six months; miscarried the last time on the sixth of November. Pain in the cervical vertebræ; pressure on the fifth and sixth, produces dyspnœa. Pain in the side, increased by pressure. Is very hysterical. Weight at the stomach after eating. Frequent menorrhagia. Catamenia now present. Towards night, she always becomes very ill. Feels best in the morning. Has been subject to pain in the side for many years. Twelve months ago, had contractions of the hands, with frequent

twitchings of the limbs. Suffers much from leucorrhœa and prurigo vaginæ. Admoveatur emplastum lyttæ nuchæ. ℞ Sulphatis quininæ, ʒss. Mist. camphoræ, ℥viii. ♏ sumat coch. iij. larga ter die. ℞ Pilulæ aloes comp. ʒi. in pilulas xii. sumat iij. pro re natâ. Lavationes frigidæ pudendis admoveantur.

4th.—Feels better; pain in the side less continuous; less dyspnœa. The blister has been very painful, and has risen well. Less weight at the stomach. Bowels have been open without the pills. Catamenia less profuse than usual, and now disappearing. Pulse 81, more equable.

11th.—In every respect better. The pain in the cervical vertebræ is gone, as is also the pain in the side. Complains of weakness at the stomach. Her bowels were rather costive, and on the ninth she took two pills, which operated severely yesterday, and last night she was rather low. Catamenia have disappeared, and she has much less leucorrhœa. Pulse 84, weak. Cont. medicamenta.

18th.—Convalescent. I have seen her frequently since, and she has had no relapse.

It is right to remark that, in the treatment of this patient, much stress was laid upon her diet and regimen. All diluents were forbidden, and her diet was directed to be plain and good, but not rich. There is certainly no mistake greater in many of these cases, than placing patients upon a low diet; they, under such a system, become more nervous, the stomach becomes less and less able to digest solid food, the whole system is weakened, and should an inflammatory disease attack them under such circumstances, they instantly succumb.

Exercise, also, was strongly enjoined, but with care that it was not carried sufficiently far, to induce exhaustion. It requires much caution in this respect, for if exhaustion ensue, all the symptoms are aggravated. It is also useful to direct patients suffering from this affection, frequently to lie down during the day, to rise early in the morning, and as they experience fatigue, to recline for about half an hour at a time. In this manner, they are enabled by degrees, to take more exercise without weariness, till they find it unnecessary to lie down at all during the day. I am indebted for the following very important case, to my friend Mr. Russell, of this town: it requires no comment.

I first saw Miss G. Sept. 29, 1830. She is a delicate woman, 35. She was in bed, and was complaining of a severe pain in her side, which affected her breathing so much, that she could only draw half inspirations. Her pulse was quick, but there was no fulness about it; her tongue moist, and covered with a whitish fur; she had no cough. Her great suffering arose from not having the power to draw in a natural inspiration; hence her breathing was short and laborious. She was regular; her bowels costive. She had had similar attacks before, for which she had been bled. I considered the attack of a spasmodic nature, affecting the external muscles of respiration. She took purgative

and antimonial medicines, and warm fomentations were applied to the chest. The attack gradually subsided, and I discontinued attending her on Oct. 11.

February 27th.—I was again called to this young woman. I found her labouring under exactly the same symptoms described above. Similar remedies were prescribed, with the addition of eight leeches to the scrob-cordis. These remedies gave little or no relief, and the spasms, with a quick irritable pulse, continued. It occurred to me that it was probably a case of spinal irritation, and on examination, I found she complained of great tenderness on pressing the upper dorsal vertebræ. I directed ten leeches to be applied to the spine; they were applied, and they bled very freely. She found almost immediate relief, and has continued free from pain ever since.

The dependence of mastodynia, occasionally, upon an affection of the nerves at their root, has not been so much noticed as might have been expected after the appearance of Mr. Teale's book. The following cases are additional proofs of the correctness of his opinion.

January 25, 1830. Mrs. Mascall, æt. 25; she had suffered very severely for a year, with pain in the breast, but there was neither lump nor hardness. There was much tenderness in the superior dorsal vertebræ. I first saw her on the fourteenth of this month, and ordered her an aperient. On the seventeenth, she returned again. The medicine had operated well, but she experienced no relief in the breast. She was ordered to be cupped over the painful vertebræ, which was done the same day. The pain was relieved during the cupping, and she has scarcely had any pain since. She has general dyspeptic symptoms, which are also much relieved.

February.—Has had no return of pain in the breast. Has not been so free from pain for twelve months. Convalescent. She had no return after this.

April 1, 1830.—Mrs. Norton. She had had pain in the breast for four months, and there was distinct tenderness in the fourth dorsal vertebra. A blister was applied to the spine, and the pain ceased immediately after the rising of the blister, and four days after she was quite free from pain. I saw her some weeks after this time, and she had had no return.

I have another case under my care at the present time. She is a servant girl, and has suffered from severe mastodynia for several months. There was considerable tenderness in the fifth and sixth dorsal vertebra, to which part eighteen leeches were applied. The pain in the breast ceased for several days, but has slightly returned within the last week. She is still under treatment.

Inflammation of the Heart.

The great uncertainty which prevails respecting the symptoms which indicate inflammation of the heart, makes an apology for relating the following circumstances.

January 4, 1830.—Mrs. Evans, æt. 39. She was pregnant, and expected labour daily. On the 27th of December, at eleven o'clock at night, she was suddenly seized with shivering, and pain in the stomach, extending up the œsophagus. Her pulse was reported to have been very quick and small, and her countenance exceedingly anxious. Some leeches were applied to the stomach, but without much relief. The next day she was bled from the arm to eight ounces. The blood was buffed. She was relieved by the bleeding, but the pain now passed to the back, and was exceedingly severe. On the 29th I first saw her. At this time her pulse was 130 in a minute, small and wiry; her breathing laborious and rapid; she complained excessively of pain in the back, extending from the fifth rib to the loins. There was no cough; no palpitation of the heart; the skin was dry; her posture quite recumbent. She was bled to 14 ounces, under which her pulse became fuller, but when this quantity had been taken, it sank, and her lips became pallid, the blood flowed slowly, but was buffed. A blister was applied, and her bowels were acted upon. The next day, she had become typhoid, the pain in the back had ceased, but her breathing remained just the same. She was delivered the evening before, with little or no change, she continued in this state till the Sunday, when she died, the seventh day from the attack; there was no secretion of milk; the body was opened thirty-eight hours after death.

Abdomen.—Externally œdematous; stomach and colon enormously distended, all the other viscera of this cavity were healthy.

Chest.—There was a considerable escape of fluid upon cutting through the cartilages of the ribs; numerous adhesions on both sides.

Two-thirds of the lungs at the lower part covered with an enormously thick layer of coagulable lymph, some parts of which were more like the fibrine occasionally found in the heart, than the common effusion of plastic lymph. The pericardium was inflamed throughout, and the two parts were united together by a layer of coagulable lymph in every part, which, upon being torn, so as to separate the cardiac part from the sac, exhibited a honeycomb appearance. This membrane was very soft, and the membrane beneath was highly vascular. The uterus was contracted but soft, and reached at least three inches above the pelvis. It was œdematous, and retained the impression of the fingers. For the history of the following case, I am indebted to my friend, Mr. Wickenden, of this town, and for the opportunity of witnessing the examination of the body after death.

April 11, 1830.—Mr. S., aged 72, enjoyed very good health till twenty years ago, at which time he was affected with dysury, passed blood by the urethra, and occasionally purulent urine. He was never sounded, but obtained relief at various times, by medicine. Three weeks ago, he called on Mr. Wickenden, be-

ing apparently affected with cholera, which, however, was attended with dyspnœa, and the common symptoms of angina pectoris; his pulse was exceedingly weak; and sulphuric æther was given him by order of a physician, who was immediately called in, but without any relief; the affection of the chest became more and more distressing, and he became utterly unable to lie down. Five days before his death, he insisted on being bled, and was so far relieved by it, as afterwards to be able to lie down. On the twelfth day from the attack, he had a paralytic seizure, he became comatose, and died.

Sectio Cadaveris, thirty-six hours after death.—Under the integuments on the left side, covering the cardiac region, there was œdema confined to a diameter of two or three inches.

Chest.—Adhesions between the pericardium and pleura costalis, and between the two pleuræ. Lungs emphysematous.

Heart uncommonly enlarged. The apex being in its proper site, and the base extending far into the right side; the right auricle extending at least two inches to the right of the mesial line; very close adhesions between the heart and pericardium, especially at the apex; three adhesions were quite recent; the external effusion corresponded to the inflamed part of the heart.

Abdomen.—Viscera healthy; urinary bladder much enlarged, and contained three calculi.

Head.—Scalp bloody on the right side; dura mater very firmly attached to the skull; arachnoid slightly thickened, and considerable effusion beneath; pia mater easily separating from the substance of the brain; softening of the posterior lobe of the right hemisphere of the brain; the membrane adhering in this part, and the brain exhibiting in the least diseased portion distinct dots, surrounded by a red blush, such as in any other organ would be referred to inflammation. The softening was so great, the soft portion fell in a semiliquid state from the rest of the brain; numerous bloody spots over the whole of both hemispheres, but more numerous on the right, slight effusion into the lateral ventricles.

Basilar arteries thickened; internal coat in patches as if there were bony deposits, but none were perceptible to the touch.

Case of Epilepsy relieved by Argentum Nitratum.

The next case is a case of epilepsy, depending upon a tumour in the skull, and yet permanently relieved by argentum nitratum, it is on this account chiefly that I relate it.

December 18, 1825.—Thomas Godfrey, aged 18, he died on the fifteenth of this month from consumption. His history follows:—

Till eight years of age he was very healthy, and as active as other children. At this period he was burnt on the cheek, and after his recovery, remaining weak, the cold bath was ordered for him; his terror of the water was extreme; shortly after this

time he lost the use of his lower extremities, and remained helpless for some months, till, by accident, falling from his chair, he struck his nose and caused a profuse epistaxis; from this period, he gradually recovered the use of his limbs, and was at length able to walk, as well as other children of his own age, but about every three weeks he had an attack of head-ache, with violent vomiting; these attacks returned regularly till the last four years, during which he had no return of pain nor sickness, but frequently complained of giddiness and dimness of sight. He remained, however, able to work till the 25th of August, when I first saw him, and he had then violent symptoms of phthisis; this disease gradually gained ground. About the latter end of September, or beginning of October, he was seized with attacks of epilepsy, which came on regularly every day at two o'clock. After they had continued a fortnight, he was ordered five grains of argentum nitratum three times a day, in a pill. The first day, after having taken two pills, he had a slight shivering at the usual time, but had no attack afterwards, till his death; he discontinued the pills after a week or ten days. He died on the fifteenth of December, and he was examined last night; there was nothing worthy of remark in the chest. The usual appearance in patients dying from phthisis were present.

Head.—The brain was unusually large; the ventricles were lined with a strong factitious membrane. They contained at least twelve ounces of fluid; the corpus callosum was much raised, and the septum lucidum had the appearance of a strong transparent membrane. The communication between the ventricles was quite open. Upon the superior anterior portion of the right lobe of the cerebellum, and strongly attached to the septum, and slightly attached to the cerebellum was a large, hard, and externally cartilaginous tumour. The interior was composed of scrophulous matter. The tumour was the size of a large walnut.

Swallowing Boiling Water.

November 5, 1826.—A child, three years and a half old. The child ran to its mother about a quarter past five o'clock, p. m. and complained of its mouth. Upon being asked what had happened, she pointed to the spout of the tea-kettle, and to her own mouth. In about a quarter of an hour she began to make a noise in her breathing, as if choked, this continued to increase, till it frightened the parents, and at seven o'clock, an hour and three quarters after the accident, they took her to a neighbouring surgeon. He poured some castor oil down her throat, and she died very shortly afterwards, little more than two hours after the accident.

Sectio Cadaveris.—The child was very fat, on the lower lip was an excoriation, as if from a blister; the lining of the palate was whitish and softened; the tongue was very much swelled, and the glottis greatly thickened; in the upper part of

the pharynx, a very slight excoriation; the tongue completely filled the mouth; the internal coat of the œsophagus white without any unnatural appearance. The stomach contained a little food, and the oil was floating upon it; on washing this off, a thick coating of mucus appeared, easily washed off, but having a strong resemblance to a thin membrane; it was soft, and peeled off in patches, but on being rolled up, seemed merely mucus that had lined the interior tunic; the mucous coat itself was perfectly sound; it could be raised in large pieces, and traced to its union with the lining of the œsaphagus; the glottis, larynx and pharynx, were perfectly sound; there was no unusual appearance elsewhere.

February 2, 1831, ————, aged 4, a fine child, drank some boiling water from a tea-kettle, on the 28th of January; in a few hours, symptoms of croup supervened, and on the 29th, she died, no assistance having been had, she was not seen by any medical man during life. The above report was, consequently, obtained from the friends.

Sectio Cadaveris.—The covering of the stomach was softened and smaller; the pharynx and œsophagus perfectly sound; the epiglottis was much inflamed and ulcerated; the glottis was red, tumid, and closed; the upper part of the trachea was inflamed, and contained much pus; there was no other unhealthy appearance in any part of the body.

The cause of death, in the first case, is very obscure; was it possible for the tumefaction of the tongue to have produced suffocation?

The cause of death in the last case is sufficiently obvious.

ARTICLE XI.

MEDICAL JURISPRUDENCE.

Important decision at Maidstone Assizes, against a Member of the College of Surgeons.

The following case is so important, as affecting the interests of those members of the College of Surgeons, who have received their diploma subsequent to the passing of the Apothecaries' Act, in the year 1815, that we deem it right to place the whole of Judge Bayley's charge to the Jury, upon that occasion, before our readers. That learned Judge has there ruled, that it is illegal for a Surgeon, who has become so since the year 1815, to prescribe or dispense medicines in any diseases, but those which are strictly external; the charter of the College of Surgeons only empowering the members of that body to practice "in the curing of wounds, ulcers, fractures, dislocations, tumours, beside and contrary to nature, and other external infirmities."

MAIDSTONE, Thursday, March 17.

(Before Mr. Baron Bayley and a Special Jury.)

THE SOCIETY OF APOTHECARIES, v. RYAN.

Mr. Thesiger opened the pleadings.

Mr. Gurney stated, that this was an action brought by the Society of Apothecaries, to recover from the defendant the penalty incurred by him for practising as an apothecary, not being qualified so to do, under the statute of the 55th George III. cap. 194, for better regulating the practice of apothecaries throughout England and Wales, by the 14th section of which, "It is enacted, that from and after the 1st of August, 1815, it shall not be lawful for any person (except persons actually in practice as such,) to act and practise as an apothecary, unless he shall have been examined by the Court of Examiners of the Society of Apothecaries, as to his skill and ability in the science and practice of medicine, and his fitness and qualification to practise as an apothecary." The learned counsel then called

Mercy Ann Hancock, who stated that the defendant, about four months ago, attended her late husband, Richard Hancock; that he had water on the chest, and his lungs were affected; that the defendant ordered leeches to be applied, and gave him medicines, and conversed subsequently as to the effect of those medicines. On her cross-examination she stated, that she had not paid the defendant, but expected to pay him the same as any other doctor.

Richard Hancock, the son of the last witness, proved that he fetched medicines for his father several times from the defendant's house.

Elizabeth Turner stated, that about 4 months ago she was ill, and attended by the defendant; that she had an inward complaint, attended with general weakness; that her legs swelled, and that she received medicines from him.

The learned Counsel called Mr. Mandy, Mr. Dutwell, Mrs. Tolhurst, and other witnesses, who proved that the defendant had attended them, but in some of the cases it appeared that surgical, and not medical, attendance was required.

Mr. Platt, for the defendant, in a speech of considerable length, contended that the defendant, who was a member of the Royal College of Surgeons, of London, was entitled to attend patients and furnish medicines, in every case in which any surgical treatment was in any way called for, by bleeding or otherwise, and that he had a right to be paid for his advice, if not for his medicines, and that the defendant, not having been paid for medicines, was not liable to the penalties imposed by the act.

The learned Judge summed up to the Jury as follows:—

Mr. Baron Bayley.—Gentlemen of the Jury, the point I shall ultimately leave for your consideration, will be, whether these cases, in which the defendant has acted, are purely surgical cases. If the party has great skill, even if he has the greatest degree of skill, yet if the act of Parliament has required that before he shall bring that skill into operation, he shall have submitted himself to the consideration of the Apothecaries' Company, in order that they may form their judgment as to his skill, you are to try his case exactly the same as if he were a man of the greatest degree of ignorance; because it is not whether he is competent or not,—that is a point with which we have nothing to do,—the only question for your consideration is, whether he has acted in opposition to the provisions

of the act of Parliament. This act says, no man shall act as an apothecary, without having obtained a certificate of his fitness from the Apothecaries' Company; and before they can properly admit him, they shall ascertain "his skill and ability in the science and practice of medicine," and "his fitness and qualifications to practise as an apothecary." He has satisfied the Surgeon's Company that he is qualified to act as a surgeon, and therefore in surgical cases he is at liberty to act; but because he is a surgeon, he is not entitled to go beyond those limits, and act in cases which are clearly within the privilege of the apothecary, and in the privilege of the apothecary only. Gentlemen, I take it that originally the division between the physician, the surgeon, and the apothecary, was probably this:—The physician pointed out what were the medicines proper to be used, the apothecary mixed up those medicines, and the surgeon was called in, in cases of operations that were to be performed. If there was a wound, that was properly a surgical case; if in the course of the discharge of his duty, the physician found that bleeding was necessary, then the surgeon was called in, not because that was in the bulk of it a surgical case, but because, in a medical case, a surgical operation was to be performed. Gentlemen, the power of a surgeon is, in a great degree, to be collected from the clause read in the charter, to which I shall be right in directing your attention, that when you see what the charter of the Corporation of Surgeons is, you will see the limits within which the Crown, at the time that charter was granted, meant they should have power to act. It defines their limits, gives them power to act to that extent, and not to go beyond. Now that provides that every freeman of this company, "shall use all and singular plasters, ointments, compositions, medicines, and other medicaments, to and belonging to the art of surgery, which by such so approved and admitted as aforesaid, have been heretofore had or frequented, and which have been by them and their successors, or shall hereafter be esteemed to be fitting, wholesome, and convenient, for the better and more speedy recovery of the health of their patients," in cases of surgery, that is to say; and then it explains what are the surgical cases:—"In the curing of wounds, ulcers, fractures, dislocations, tumours, beside and contrary to nature, and of other external infirmities as to them may seem most expedient, any statute notwithstanding." These are the description of cases to which, by the charter, the surgeon's right extends, and to those cases the surgeon's rights are confined. I will state them to you over again. "Wounds, (which are external, you know,) ulcers, fractures, dislocations, tumours beside and contrary to nature, and other external infirmities." Gentlemen, originally the power of the apothecary was confined, where you had the physician, surgeon, and apothecary, and were defining the limits of the rights of each, to the mixing up of such medicines as the physician should from time to time prescribe. And there is in this Apothecaries' Act an express provision, that in case of the prescription of any physician, not of a surgeon, but in the case of any physician, if they shall neglect to make up the medicine faithfully according to the prescription, they should be liable to the pecuniary penalty imposed by the act. That is silent as to the prescriptions by surgeons, and probably that was because it might have been the understanding of the legislature at that period of time, that surgeons, in the character of surgeons, were not the proper persons who should pre-

scribe. There being many cases in existence at that period of time, in which the apothecary went beyond the power of compounding medicines on the prescriptions of physicians, and where he was the only medical man called in, he combined within himself the power of physician and apothecary; and as it seems to me, the legislature in the act of Parliament, required, if any other person took upon himself to act under a combination of those two powers, he was to be considered, under the penal clause of this act of Parliament, as acting as an apothecary. The clause in the act which requires that he should be examined "as to his skill and ability in the science and practice of medicine, and his fitness and qualification," it seems to me, contemplates the double character I have mentioned; namely, that of attending patients, and exercising his own skill as to the proper medicine to be exhibited to those patients, and making up the medicine in pursuance of his judgment in that respect: therefore, if in this case you should find, that in cases not surgical, and cases within the limits of the established course of practice of apothecaries at the period of time at which the act of Parliament was passed, he has been so acting, then he will be liable to the penalties this act of Parliament imposes. While this case was proceeding there was some question put, originating from the practice of many eminent surgeons, that may admit of a very ready solution. I shall answer it in two ways. In the first place, prior to the 1st of August, 1815, there was no restraint as to who might act as an apothecary; there was no provision that persons should have undergone that examination which this act of Parliament provides; any person, without any examination, was warranted in practising as an apothecary. This act of Parliament applies only to those who should thereafter practise. If they were in the habit of practising as apothecaries on the 1st of August, 1815, they were at liberty to continue so to do; therefore, in the case of Sir Astley Cooper, and the case of Mr. Cline, and in the case of many eminent surgeons of our day, who have acted in the dispensing their own medicines, and compounding them subsequent to the 1st of August, 1815, the answer as to them would be this; that they were only doing that which, prior to the act of Parliament, they had been in the habit of doing, if they had been practising in the character of apothecary prior to that period; and were at full liberty to continue so to do, notwithstanding this act. That is one answer. Another answer is this; that unless they were protected by having been in practice prior to the 1st of August, 1815, their practice, when admitted surgeons, would have been illegal within the provision of the act of Parliament, provided they acted in medical and not in surgical cases. Gentlemen, I think it would be too limited a construction of this act of Parliament to say, that every surgeon who, in a case properly surgical, compounding his own medicines, was acting in defiance of this act of Parliament. I do not lay it down to you as being law on that subject, but I think, in a case properly surgical, where the surgeon, in his own judgment, thinks a particular medicine will be right and co-operate with the operation he is either about to perform, or which he has performed, I think that he may, without infringing this act of Parliament, make up his own medicine.

Mr. Platt.—My Lord, allow me before you leave the record, to call your attention to the 29th section of the same act, "excepting the liberty of the surgeon." The language is very remarkable there; will your lordship be kind enough to advert to it?

Mr. Baron Bayley.—"That nothing shall extend, or be construed to extend, to lessen, prejudice, or defeat, or in any ways interfere with the rights, authorities, privileges, and immunities, vested in and exercised and enjoyed by either of the two Universities of Oxford and Cambridge, or the Royal College of Physicians, or the Royal College of Surgeons." That is, in their character of a collegiate body.

Mr. Platt.—He says he is a member of the college.

Mr. Baron Bayley.—"The Royal College of Surgeons" would mean as to any privilege conferred on the College; but when I look at the charter, the charter tells me what rights an individual member has, and what right the College has, in respect of the individual members belonging to that body. As I have already read those words over to you twice, it is not necessary to read them again. The learned Judge then recapitulated the evidence of Mrs. Hancock, Richard Hancock, Elizabeth Turner, and of the other witnesses; observing, that the cases of a child who had a sore, of Mr. Mundy who had a blow, and of Mr. Tolhurst who had a tumour in the liver, seemed to him to require surgical, rather than medical treatment. Now, gentlemen, these are the different cases which you will have to take into your consideration. I do not detail to you the evidence of Dr. Webster and the gentlemen who came from Apothecaries'-Hall, because there is a great deal in that, which you had full opportunity of hearing, as applicable to the question. I have recapitulated the four cases to which, as it seems to me, your attention should be particularly directed; there is Hancock with the water on the chest, and his lungs affected, and on which leeches were applied; there is Elizabeth Turner with an inward complaint and weakness, with her legs swollen; there is Mrs. Dutnell, whose disease is inflammation on the liver; and Isaac Copping, whose wife has a stoppage. Now, gentlemen, are these medical or are they surgical cases? If any one of them was a medical case, the defendant has infringed and broken in upon this act of Parliament, and is liable to the penalty for having acted in such a case. You will consider whether these are medical or surgical cases. If you are convinced that they are all of them surgical cases, purely surgical cases, why then the defendant will be entitled to your verdict; but, on the other hand, unless you are satisfied that each of those cases is properly a surgical case, then I think this defendant has broken the act of Parliament, and is liable to the penalty this act of Parliament imposes.

A Juror.—It appears, my Lord, he did not do it beneficially for himself, except in the case of the child.

Mr. Baron Bayley.—He has not actually received the money, but each of the parties expected he would.

Mr. Platt.—What they expect, cannot be evidence, my lord.

A Juror.—Does your lordship think, in not receiving any thing for it, he acted in a legal point of view?

Mr. Baron Bayley.—I think not, if he had gone on not charging to different cases. But where a man is carrying on business for his own profit, and for his own subsistence, and has a shop for the purpose, it seems to me he is practising as an apothecary, though he does not happen to have sent in his bills. One or two of the witnesses said they expected he would send in his bill: another said he had not paid him, because, he said, he had not sent in his bill.

Mr. Platt.—My Lord, I submit the expectation of witnesses is hardly evidence against the party.

Mr. Baron Bayley.—I have no doubt, Mr. Platt, but that the expectation of a man that he was to be paid when in the ordinary course of his business is evidence.

Mr. Platt.—Will your lordship allow me to beg of your lordship to ask the jury whether they believe he gave his medicine, intending to be paid for it.

Mr. Comyn.—There is nothing in the act of Parliament about that.

Mr. Platt.—I can assure your Lordship it is a question between the two branches of the faculty.

Mr. Baron Bayley.—I have no difficulty in saying this, that it is most desirable that it should be most distinctly understood, that a man who has only the qualification of a surgeon ought not to be at liberty to act as an apothecary; because the consequence of that would be, that all those wholesome provisions,which this most useful act of Parliament, introduces as checks upon the apothecary, would be no checks at all upon the surgeon.

A Juror.—May I be permitted to ask your lordship, if you lay down to us as law, that only external injuries belong to surgery; if your Lordship would favour us with your judgment on that, we would bow with the greatest respect to that.

Mr. Baron Bayley.—That is a question of construction on the charter. "Curing of wounds."—Wounds are external, "ulcers, fractures, dislocations, tumours, beside and contrary to nature, and other external infirmities."

Mr. Platt.—Your lordship will allow me to say, ulcers may be internal as well as external.

Mr. Baron Bayley.—I know that they may be, but it is not a surgical case to deal with an internal ulcer.

Mr. Platt.—I know, my lord, surgeons who treat them every day.

Mr. Baron Bayley.—I think, from the manner in which these words are introduced, "and other external infirmities," it implies external disease.

The Jury consulted a few minutes, when—

The Foreman addressed his lordship.—My Lord, under the construction of the law which your lordship offered to the jury, they feel it their duty to return a verdict for the plaintiff, because there was no external injury in the first case.

Mr. Baron Bayley.—There will be one point on which I wish to have your opinion, by desire of counsel, which is this—whether you think the party expected to be paid for this business?

Mr. Platt.—That is not the question, my Lord, I submit. Whether he was to be paid for his medicine, is the question: he had a right to be paid for his advice.

Mr. Baron Bayley.—No, not for his advice; he cannot be paid for his advice. Whether he expected payment will be the point for your consideration. The first witness, who was Mrs. Hancock, says, "I have not paid him: of course I expect to have to pay him the same as any other doctor." That is what she said; and Mrs, Turner said, "I have not paid him for my daughter, because he has sent no bill: of course I expect to have to pay him." You may collect from the testimony of both these witnesses, that he did not hold out to them that he meant to do this gratuitously; and if not

gratuitously, you will form your judgment. Then there is another point,—how is a man to live, unless he is paid for the labour which he performs?

Mr. Platt.—My Lord, with great submission, that does not raise the point of law I wish to raise about the medicine.

Mr. Baron Bayley.—I cannot put any other question.

The Foreman.—My Lord, the Jury have no doubt in stating, they consider he expected generally to be paid.

Verdict for plaintiff, for one penalty of £20, on the case of Richard Hancock.

ARTICLE XII.

Report of the Birmingham Eye Infirmary, for the last half year.

BY MR. MIDDLEMORE,

Assistant Surgeon to the Eye Infirmary.

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On the utility of Strychnia in certain forms of Amaurosis.

It will be readily admitted that the term amaurosis comprises a variety of pathological conditions, not only most diversified in their seat, but various in their state; for instance, an accumulation of fluid in the infundibulum, producing pressure upon the optic nerve; or an alteration of the ossific aperture through which the optic nerve passes; an atonic state of the retina, unattended with any organic alteration; or an increased fulness of its vesssls from general plethora, have all been designated by the term amaurosis, whenever they have led to much diminution of the power of vision; yet nothing can be more different, either as regards the seat of the mischief, or the state of the parts affected, than these several morbid conditions. It is not, however, from an intention to demonstrate the necessity of adopting a more precise and definite term, for the designation of the disease in question, that I have alluded to, what appears to be a great defect in the name generally applied to these various conditions of morbid action or altered structure, but to point out the necessity of selecting that particular state of the system, or the retina, or other part of the nervous apparatus of the eye, leading to partial or total bindness, for the employment of a remedy which, on two former occasions, I ven-

tured to recommend to the notice of the profession. It will be readily conceded, that on this circumstance depends the probable success or otherwise of the local application of strychnia in amaurosis; and, as I am well aware, that its use is attended with annoyance to the patient, and trouble to the surgeon, and that on this account, it is not likely to be had recourse to, unless under an impression of its great value; and as the first trial, if unattended with advantage, will in some instances lead to its discontinuance, I shall trespass for a short time upon your pages, in order to impress upon the serious attention of your readers, the description of amaurotic symptoms which have been present in those subjects, in whom I have most advantageously had recourse to its assistance.

During the last six months I have received from several medical friends, a request to take under my care persons suffering from amaurosis, for the express purpose of subjecting them to a trial of the local application of strychnia, but in nearly every case they have been very unsuitable subjects; and, in some instances, it would have been highly improper to have attempted its use. The last patient I saw was one of this description, he was an attorney's clerk, who had been accustomed to write for many hours by a strong gas-light; and he remarked, (which, by the bye, is a very general observation), that he was compelled to increase the strength of the light until the flame was eventually of a very vivid description; the strength of light with which he could see extremely well, when he first commenced the burning of gas, afforded him, after a time, little more than an indistinct perception of surrounding objects, and he was consequently compelled to increase the power of the flame, as has been mentioned; in this way he continued sometimes writing three or four, at others, six or seven hours together, by the assistance of this immoderately augmented light; by this means an attack of sub-acute retinitis was induced, an attack neither so rapid in its progress, nor so obviously disorganizing in its effects as the acute retinitis, nor so tardy in its course as the chronic form of this disease. I did not see this patient until his vision was nearly destroyed, when an examination of the eye, and an investigation of the history of the case, assured me that it was quite nonsuited to the advantageous employment of strychnia. Had the remedy been used in this case, it is quite obvious that the patient would have suffered the inconvenience of its application, without any chance of deriving the slightest benefit; and it is by no means improbable that it might have been discarded from the good opinion of the gentleman who had only been induced to try its powers in consequence of the recommendation of others; nothing, however, would have been more unfair than to have concluded from such a description of experience, even presuming the strychnia had been tried, that it had no influence upon the disease designated by that indefinite term amaurosis. In nearly every instance in which I have employed the strychnia, locally, for the purpose of restoring lost, or improving impaired vision, other modes of treatment had been previously adopted, and the patients had been under the care of those, who, from my knowledge of their skill and acquirements, would treat them in the most judicious manner according to the general rules of practice in similar cases, so that I have had the great satisfaction of proving most unequivocally the decided value of the remedy in question.

If a person be suffering from loss or diminution of the power of vision from an atonic state of the retina, or other part of the nerv-

ous apparatus of the eye, or of the system generally, the local use of strychnia (applied in the following manner)—will be, in my opinion, the most likely means of removing the defect, more especially, if it be of recent occurrence. But it will, in many instances, be found necessary to institute a most rigid examination, before deciding upon the necessity or propriety of the treatment: for instance, the history of the patient must be closely investigated, and the eye subjected to the most attentive examination, and if the result of this enquiry and examination lead to the opinion that the defect does depend on the atonic condition of one, or all the parts to which I have just alluded, he may, with safety, be subjected to the very tedious and somewhat painful plan of treatment it remains for me to explain; but it will be readily admitted that if this examination be not conducted in the most careful manner, it will be impossible to discriminate, with any approach to certainty, the particular conditions of the retina, and other parts of the nervous apparatus of the eye, productive of amaurosis, which admit of alleviation or removal; nor can the trial of strychnia, without such a preliminary investigation, be viewed, as otherwise than a rash and criminal procedure; a procedure which is more likely to destroy the power of vision for ever, than to yield any prospect of relief. Having pointed out that condition of the retina, or other part of the nervous apparatus of the eye, or of the system, (which I have termed atonic,) capable of being relieved by the local application of strychnia, it may be thought right to complete the treatment, it may be frequently necessary to combine with this local remedy; but as my object is merely to recommend the employment of the more important remedy; and as the various tonics and stimulants, which it may often be advisable to use at the same time can be readily adapted to the circumstances of invidual cases; and as they form but a very secondary and subordinate part of the treatment, I shall not extend my observations, nor trespass upon your pages to attempt the supply of this trivial deficiency.

The following case not only illustrates the mode of using the strychnia, but explains the condition of retina producing amaurosis, which has appeared to me likely to be benefitted by its use, unless, indeed, it be admitted that a suspension of its action for a long period, induces some alteration of structure, not indicated by constitutional symptoms, nor evidenced by local changes, by which it is permanently unfitted to receive and obey the stimulus of light. A few weeks ago, I attended a Miss P. of this town, who had, many years since, been operated upon for cataract, by the late Mr. Saunders; she was about nine years old at the time of the operation, which was very well peformed, if we may judge from the appearance of the eyes, which do not present any traces of inflammatory mischief, and are only to be distinguished from perfectly healthy organs, by the large size of the pupil, a rotatory motion of the eye-ball, and a small remnant of capsule at the side of the pupil; this girl is highly intelligent, and in a moderately good state of health, and, with the exception of the defects just mentioned, her eyes are perfectly natural and healthy in appearance, and yet she has never been able to distinguish the form, colour, or magnitude of surrounding objects, having merely a perception of light, and a capacity to distinguish its degrees, when varied from an extremely feeble to a very brilliant light; a power which she possessed though to a less extent, prior to the performance of an operation. Consi-

dering the defect of vision to have arisen in consequence of permitting the retina to remain for so many years unimpressed by its natural stimulus, and that by exciting its sensibility, it might still be rendered obedient to the stimulus of light, I employed the strychnia in the following mauner:—having placed a blister over each eye-brow, and afterwards cut away the raised cuticle, so as to expose an extensive surface, which would be likely to prevent the frequent necessity of re-blistering the part, I sprinkled the strychnia equally upon the whole surface, commencing with the sixth of a grain upon each, and gradually augmenting the quantity until I was enabled to use a grain upon each side, at which time she had occasionally a much increased perception of light, with frequent scintillations; but, unfortunately, the remedy began to affect the head, producing so much uneasiness and nervous disturbance, that I did not judge it prudent to persevere in its use any longer, much less to increase the quantity, to that extent, which, in my opinion, was indispensible to success. In the course of the treatment, I was pleased to hear this patient complain of the sensation of scintillation, as, on former occasions, that symptom had been frequently followed by the most satisfactory result; and, although in this instance, I was unable to persevere as I could have wished, in consequence of the extreme head-ache and other symptoms, yet, it is still hoped that, on some future occasion, she may be enabled to bear the requisite treatment, without a recurrence of these untoward symptoms.

There is one other circumstance which was remarked in this case, and which appears to me worthy of recording; when the blistered surface had healed in its circumference, I was compelled to place nearly the whole of the strychnia upon a very small space, indeed, a great part of it was dusted upon, and immediately around, the situation of the supra-orbitary nerve; and it was observed that the remedy acted with greater advantage, than when placed upon a larger extent of surface. It immediately occurred to me, that the nervous connexion subsisting between this branch and the nervous supply of the iris, afforded a satisfactory explanation of the circumstance. Acting upon this impression, I repeated this mode of application upon a patient soon afterwards, and instead of applying a long narrow blister over the whole eye-brow, and partly upon the temple, as on former occasions, I directed the lower border of the blistering plaster to be placed, as nearly as possible in, and just above, the situation of the supra-orbitary notch, desiring that it might not extend beyond the outer edge of the eye-brow, and, in this case also, the advantage of limiting the application of the remedy, was equally evident. As, however, the quantity it may be necessary to use, in order to produce the desired effect, will in some patients be considerable, and, as we cannot calculate upon the absorption of a thick layer of powder, with the requisite degree of rapidity, it will often be adviseable to scatter it more extensively; bearing in mind, of course, that only as much of the strychnia must be placed iu the situation we have considered to be that in which it acts most efficiently, as can be absorbed within the time allotted for a second application.

If, in the case of Miss P. the use of strychnia had been commenced soon after the failure of the operation of solution had occurred, there would have been every prospect of the recovery of a much greater degree of vision than she at present enjoys; but, as the

retina had remained in an unexcited state for so many years, it was not probable that any treatment would restore its power, and it was only after an explanation to this effect; after having explained the very little chance of success the application of the strychnia afforded, in consequence of the long duration of blindness, that I consented to adopt the treatment, she was desirous of undergoing.

The following brief directions will include all that I have hitherto found necessary, to insure the full action of this remedy: place a narrow blister over each eye-brow, which must not extend beyond a line drawn upwards from the external canthus; when it has risen sufficiently, cut away all the cuticle, and apply, for half an hour, a piece of linen, to absorb the serum, which is apt to be discharged in large quantities, for a short time after the removal of a blister, then dust the remedy chiefly in the situation of the supra-orbitary nerve, but not so thickly as to prevent the entire absorption of the whole layer of the powder, at the time of the second dressing, which should be, as nearly as possible, twenty-four hours afterwards; twenty-fours between each dressing is a proper and necessary interval; cover the blistered surface with a piece of linen very thinly spread with ung. cetacei, for, if much greasy matter be mixed with the powder, it is less easily and quickly absorbed; but, unless a little be applied, the linen adheres to the wound, and occasions great pain in its removal. Increase the dose of strychnia very gradually, until the state of vision is improved, or symptoms indicative of the injurious agency of the remedy occur. If there be much local pain excited by the application of the strychnia, dilute it with flour, or mix it with opium; and if that do not succeed, suspend its employment until the stomach and bowels be improved, by a plan of treatment instituted expressly for their benefit, and then resume its use; if severe pain in the head, convulsive muscular twitchings, great general nervous excitement, or other symptoms, denoting the injurious agency of the strychnia upon the constitution, supervene, and the condition of vision be not improved, it must be discontinued altogether; as it would appear probable that in such case, it was not likely to exert a favourable influence upon the disease, at the same time, that from some peculiarity of constition, it was calculated to do important general mischief.

The case of Miss P. is one, amongst others, which have fallen under my notice, strongly illustrating the propriety of the recommendation of the late Mr. Saunders, with regard to the early performance of an operation for the removal of congenital cataract. As it is impossible to conceive a greater argument in support of the opinions of that amiable man and excellent surgeon, upon this subject, than the remarks of Dr. Farre on the success of his (Mr. Saunders's) operations, performed upon children at various ages, I shall beg leave to make the following brief extract from them. The sensibility of the retina "in many of the cases cured at the ages of four years and under, could not be suppressed in children who had enjoyed vision from birth; but at eight years, and even earlier, the sense was evidently less active; at twelve, it was still more dull; and, from the age of fifteen and upwards, it was generally very imperfect, and sometimes the mere perception of light remained."

ARTICLE XIII.

Remarks on the case of Hoo Loo, the Chinese.

BY MR. RICHARDSON, SURGEON, CHELTENHAM.

As much has been said, and much written, about the late operation at Guy's hospital, upon the unfortunate Chinese, I beg to submit to the notice of the profession, two distinct methods for the preservation of life in similar cases, as practiced in the hospitals of Germany at the present time.

First, a German surgeon would never attempt to remove so large a tumour *at once*, but by several operations, allowing an interval of 10 to 20 days between each removal of a part of the tumour, so that the force of the circulation may gradually accommodate itself to the diminished quantity of blood required; thus I have seen a tumour weighing in all 32lbs. removed at three operations, and the patient recover speedily.

Secondly, during or after an operation, (or accident,) attended with profuse hæmorrhage, or accompanied with alarming syncope, without much loss of blood, (as in the case of the Chinese,) when all the usual and most powerful stimulants have failed, I have seen the most decided and beneficial effect produced by the administration of a small dose of musk. I have seen the circulation when at the lowest ebb, and the pulse imperceptible at the wrist, powerfully and speedily excited, and the sinking vitality, as it were, miraculously restored. By my case-book, I find the quantity of musk in substance given at one time, in no case exceeded two grains; and in one case only in five, was it necessary to repeat the dose.

It is a common and valuable remedy in Berlin, in cases of extensive sloughing and mortification of the extremities, where the powers of the system are not sufficiently strong to warrant an operation; and one great recommendation to musk as a stimulant, is, that it does not produce any irritation on the surface of a wound.

ARTICLE XIV.

PAROCHIAL RETURNS of Births, Marriages, and Burials, that have been registered in the several parishes of the City and Suburbs of Worcester, including those of the several congregations who dissent from the Established Church, between the 1st of January and the 1st of April, 1831.

Births, 300; Marriages, 79; Burials, 223.

NOTICES AND ACKNOWLEDGEMENTS.

The Editors are under the necessity of postponing the insertion of some important articles, until the next No.

As the present No. concludes the second volume of the work, an index to it will appear with the following No. which will be published on the 1st of Aug.

All Letters and Communications, addressed, free of expense, (under cover,) to the Editors, at the office of the Worcester Journal, will receive immediate attention.

Books received.

The Physiology of the fœtus, liver, and spleen, by George Calvert Holland, M. D. A critical exposition of Phrenology, by Mr. Charles Covey, Surgeon, Birmingham. The Journal of the American Medical Sciences. The Glasgow Medical and Surgical Journal. The North of England Medical and Surgical Journal. The London Medical and Surgical Journal, and the London Medical Gazette.

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